

# PURCHASING

Next Month! 6th Annual  
"Purchase for Profit" Issue

APRIL, 1954

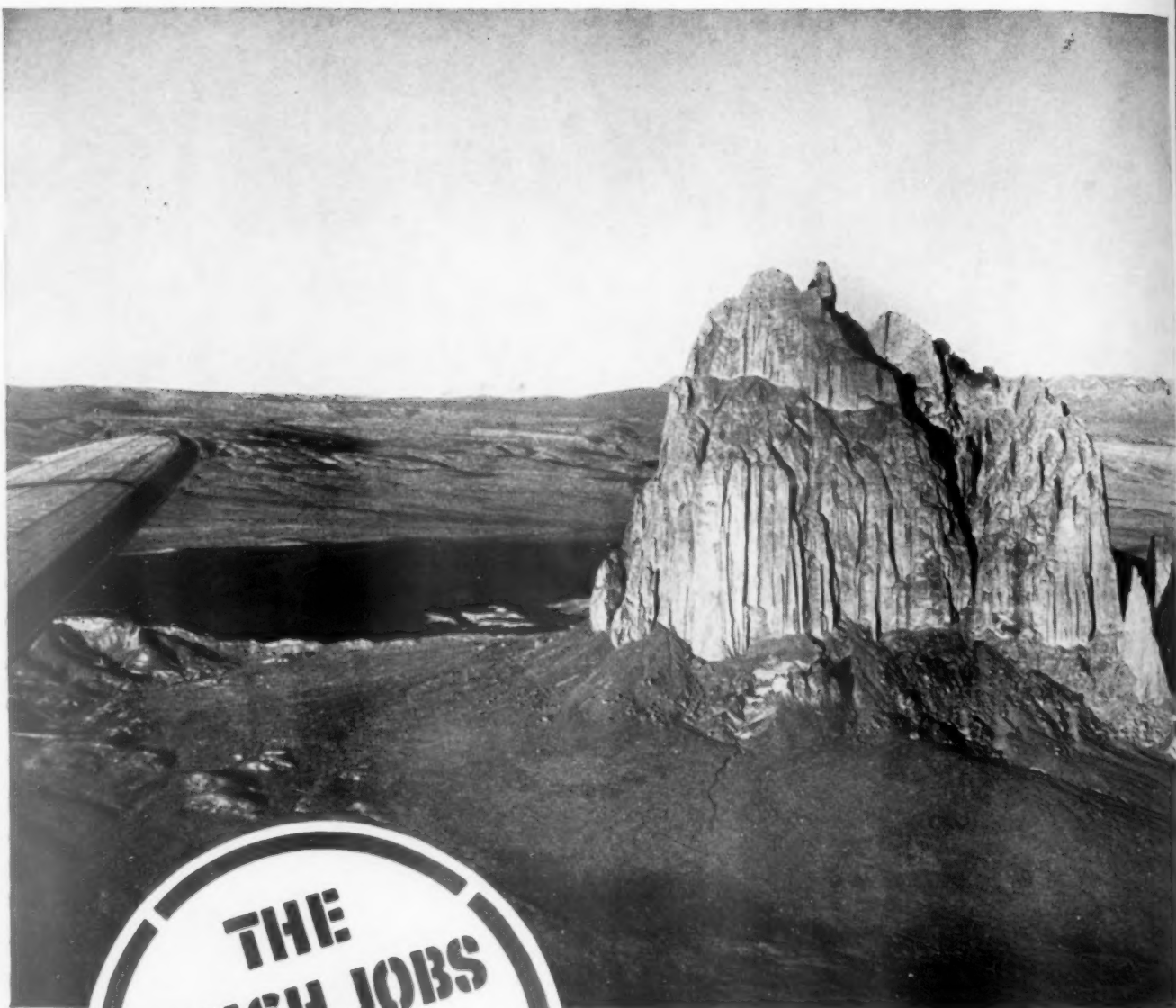
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**AIRCRAFT LUBRICATION**, for example. Everyone realizes the vital importance of effective lubrication in assuring dependable flight. Only the finest lubricants will do. So Texaco takes pride in the fact that—

*For over 15 years, more scheduled revenue airline miles in the U. S. have been flown with Texaco Aircraft Engine Oil than with any other brand.*

Traditionally, the tough jobs throughout industry go to Texaco. Put dependable Texaco Lubricants and skilled Texaco Lubrication Engineering Service to work in your plant . . . whatever you make or wherever located . . . for greater production and lower unit costs.

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**TEXACO** Lubricants, Fuels and  
Lubrication Engineering Service

TUNE IN . . . METROPOLITAN OPERA radio broadcasts every Saturday afternoon. See newspaper for time and station.

For More Information Circle No. 101 on Inquiry Card—Page 17

# PURCHASING

The National Magazine of Industrial Purchasing

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## FREE INFORMATION SERVICE

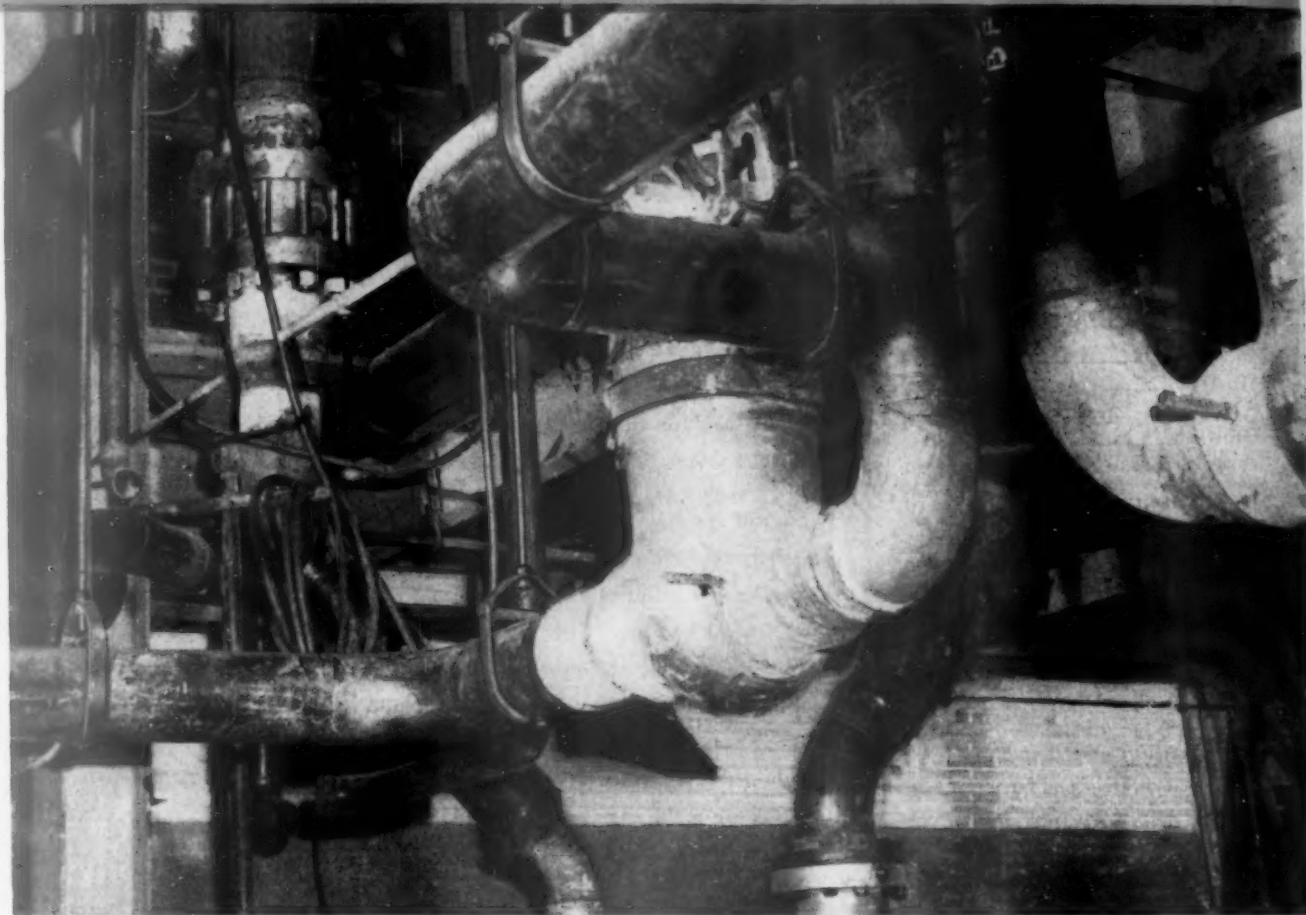
To get further information on anything mentioned in this issue, use Reader Service Card opposite page 17

APRIL, 1954

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# STRONGER THAN PIPE



Boiler feed discharge piping shown under construction above will operate at 2700 psi and 430° F.

## Grinnell Welding Fittings

exceed bursting strength of seamless pipe

Grinnell Welding Fittings are designed and processed to have a bursting strength greater than the calculated bursting strength of the seamless pipe to which they are to be welded.

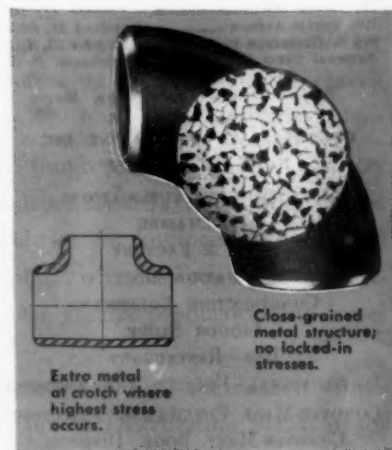
Welding elbows and bends are made from seamless steel pipe by a forging process which produces uniform wall thickness at all points; there is no thinning of outer wall.

Welding tees and crosses are made from seamless pipe by a drawing process which provides

extra metal and protection at the crotch, where highest stress occurs.

All Grinnell Welding Fittings are process stress-relieved, thus improving grain structure and increasing the strength of the metal.

With all Grinnell Welding Fittings, you get true circularity; smooth, clean inside surface; full, effective radius; easy, sweeping turns; accurate bevels; and true included angles. Available in a wide range of types and sizes, metals and alloys. Send for descriptive catalog.



## GRINNELL

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pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves  
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies  
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For More Information Circle No. 109 on Inquiry Card—Page 17

PURCHASING

# PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

April 1, 1954.

## LISTENING AT THE LISTENING POSTS

If business is looking for a home in Government, the Department of Commerce has its latch string out.

Three approaches are being followed for getting the business viewpoint as a guide for Government policy and action.

First of these at the top policy level is the Business Advisory Council, a blue ribbon group of top industrialists and financiers who meet six times a year to advise the Secretary of Commerce on business conditions.

The council is made up of 64 members. They are nominated for membership by a select nominating committee, but final choice is made by the Secretary of Commerce.

\* \* \*

## BUSINESSMEN AS BUREAUCRATS

At the administrative level, efforts are being made to have businessmen serve as directors of the 25 divisions of the Business and Defense Services Administration.

Idea is to reach as high on the business totem pole as possible for personnel. Top level personnel is hard to get. Business now is too competitive to spare a key man for Government service.

\* \* \*

## EARS AND EYES OF INDUSTRY

To get to the grass roots of industrial management, the Business and Defense Services Administration has organized a series of industry meetings and conferences.

First are the industry advisory committees, a holdover from the days of the National Production Administration.

Idea was for the "IAC's" to hold regular meetings and to be informed on matters of war urgency—such as the allocations of materials, controls, and future planning.

In turn, the IAC members were to tell the Government how much metal they could get by on and still fill the minimum requirements for their civilian product.

\* \* \*

## IAC'S TO CONTINUE

Department of Commerce will keep the IAC's going. Remnants of the war control period are still with us—such as priorities and some material use limitations.

Big question is whether the interest of the IAC members can be maintained. It is fine to talk about listening posts and sounding boards for industry, but there has to be a new tune with every meeting, and there is some question whether the Government can maintain any degree of variety.

\* \* \*

## SOMETHING NEW HAS BEEN ADDED

As a supplement to the IAC's and possibly, at a later date, to take the place of these committees is a new approach—industry conferences.

It is hard to tell the difference between an IAC meeting and an industry conference as far as the end result is concerned. The Government people attending the conference tell the businessmen what the Government is doing and planning to do; indus-



## ***Six bucks to repair a six-buck item?***

Too much? Maybe so, but it's happening all the time. At today's maintenance rates of \$3 to \$4 an hour, regrinding a valve seat isn't a small job any more. Nor is repacking a valve, or installing a new one. Even replacing an ordinary pipe fitting isn't the same job it used to be.

You see, piping maintenance labor has gone up along with all other costs. That's why any excessive maintenance can quickly equal or exceed equipment cost.

You'll meet this problem best by insisting on the most dependable quality in piping materials. By having greater assurance they will stay on the job longer, need fewer repairs, cause less trouble. By standardizing on Crane Quality—the choice of thrifty buyers in every industry.

Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas.



# CRANE

**VALVES • FITTINGS • PIPE • PLUMBING • HEATING**

For More Information Circle No. 116 on Inquiry Card—Page 17

# ▲PURCHASING PREVIEWS

continued

try spokesmen tell their side of the story. Trade association people also attend the conferences on an invitation basis.

\* \* \*

## WHAT THEY TALK ABOUT

Industry spokesmen are mostly talking about taxes, tariffs and surpluses.

It isn't hard to guess the business approach to taxes. Like everybody else, business wants taxes down. Wherever a tax is imposed, it gores somebody's ox. At the sales level, taxes impede selling. At the processing level, taxes add to the cost of the product and, in many instances, interfere with capital improvement of plant and equipment. At the raw material level, taxes create an item of cost that pyramids all through the processing and marketing cycle.

\* \* \*

## TARIFF WALLS WON'T COME TUMBLING

Where manufacturers find that a foreign product is giving them tough competition, the first thought that comes to mind is to slap a tariff on the product.

On the other hand, tariffs on foreign goods bring reciprocal action on U. S. exports, and so there has to be some measure of reason and balance.

Outlook is for little change in our tariff policy. Some levies will be reduced and some will be adjusted upward, but the overall is for a sideways movement—no major change.

\* \* \*

## HAND TOOLS IN SURPLUS

On surpluses, the problem is more immediate, and there is something that can be done.

The military, as is its wont, has accumulated great stocks of supplies—among them hand tools.

Now, a hammer is a hammer, and does not differ much from year to year. Question is, what to do if the military has too many hammers. Simple answer is to sell them as surplus.

The industry representatives coming to Washington naturally protest any move by the military to liquidate its overstock of hammers at distressed prices.

Department of Commerce agrees. What the Commerce people say is that a hammer will not lose its utility. Keep it in stock, and use it when you need it.

It remains to be seen how this question will be resolved, but the fact that the Department of Commerce is willing to fight such battles against so formidable an opponent as the military, adds some interest and luster to the industry conference program.

\* \* \*

## ONCE BITTEN— TWICE SHY

General attitude of industry to Government overtures is mixed. Some industry spokesmen who have come to Washington like it. They feel they have a home to come to, a place to speak and a sympathetic ear to listen.

Others say they want none of it. They don't want Government intervention—even of a friendly kind.

At this stage, it's a stand-off—a wait-and-see approach. If Government can help keep business flourishing, it might be good to hold hands, but there is considerable suspicion, which will take time and many good turns by Government to dispel.

**COPPERWELD STEEL COMPANY**  
WARREN, OHIO



**INTERIOR CORRESPONDENCE**

FROM E. W. Husemann  
Assistant Chief Metallurgist

SUBJECT Steel Alloy Leaded

DATE March 3, 1954

TO W. J. Buechling  
Chief Metallurgist

Dear Bill:

Here is another report on the comparative machining qualities of leaded alloy and carbon steel. The story bears out the excellent results experienced by another manufacturer--faster machining--longer tool life--superior finish. One special advantage for automatic screw machine production, however, highlighted in the tabulation below, is the limited number of regrinds--even on the cutoff operation.

Material - 4150 Leaded Alloy 1-7/16" Rd.  
Spindle Speed 435 RPM

Cycle - 102 Sec.  
Part - 12 Pt. Socket  
Total pieces run - 750

Tool	Feed Rev.	1st Regrind	2nd Regrind	3rd Grind	4th Grind	5th Grind	6th Grind	Total Regrind
Form Tool	.0016"	450 pcs						1 ✓
Comb Drill	.008"							0 ✓
3/4" Drill	.006"							0 ✓
Recessing Tool	.002"							0 ✓
Counter Bore	.012"							0 ✓
Knurling Tool	.006"							0 ✓
Cutoff Tool	.0024"	450	220					2 ✓

Material AISI 4150 1-7/16" Rd.  
Spindle Speed - 290 RPM

Cycle - 142 Sec.  
Part - 12 Pt. Socket  
Total pieces run - 1000

Tool	Feed Rev.	1st Regrind	2nd Regrind	3rd Grind	4th Grind	5th Grind	6th Grind	Total Regrind
Form Tool	.0016"	190 pcs	320 pc	200 pc				3
Comb Drill	.008"	250	90	400				3
3/4" Drill	.006"	40	210	324	300			4
Recessing Tool	.002"	83*	(*Tool Slipped in Holder)					1
Counter Bore	.012"							0
Knurling Tool	.006"							0
Cutoff Tool	.0024"	40	169	200	70	107	200	6

It is important to note that mechanical properties, yield, tensile, and ductility, more than met specifications.

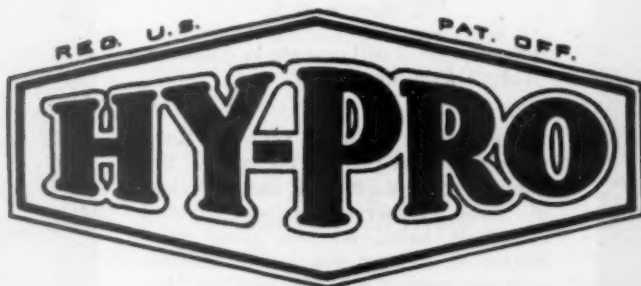
*Ed*

# HY-PRO SPECIALIZES TAP PRODUCTION

*...to help cut your unit costs*

Tap production is specialized at Hy-Pro. Their full staff—from design through all manufacturing operations—concentrate their work on this one important line. Every operation in the manufacture of Hy-Pro taps is constantly maintained, restudied and evaluated to bring you the finest quality product at a minimum cost. Through the years their dependable record has won Hy-Pro their reputation as “the tap specialists”.

Get in touch with your Hy-Pro distributor or call Hy-Pro direct. They offer you a full line of highest quality taps, backed by the experience of specialized production.



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**ADDITIONAL WAREHOUSES:**

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DETROIT 21, MICH.  
University 4-1077

6141 North Elston Ave.  
CHICAGO, ILL.  
Newcastle 1-6486

# NEWS OF YOUR Suppliers



W. H. Van Buren is now assistant general sales manager, Eastern Division Branches, **Quaker Rubber Corp., Division of H. K. Porter Co., Inc., Philadelphia.** He will coordinate the



W. H. Van Buren

sales program of Quaker's eight eastern branches in Atlanta, Boston, Dallas, Houston, Kearny, N. J., New Orleans, Philadelphia and Pittsburgh.

The Electro Dynamic Division, General Dynamics Corp., Bayonne, N. J.,



Mark L. Lane

has named Mark L. Lane to the post of New York district manager.

The transfer of three representatives of the **Refinery Chemicals Department, American Cyanamid Co., New York City,** was announced recently. Read Larson moves from Chicago to the Tulsa sales office; C. H. Groezinger goes from New York to Chicago; and F. E. Eck goes from Chicago to New York.

James S. Kone and Co., Amarillo, Texas, will represent the **Hammer-Dahl Co., Providence, R. I.,** in Texas, Oklahoma and Kansas.

C. Barry Neill, Jr., has been named sales representative of Powell Valves by **The William Powell Co., Cincinnati,**



C. Barry Neill, Jr.

Ohio. Mr. Neill will operate in Alabama, Georgia and Mississippi.

The Organic Chemical Division, **Mon-santo Chemical Co., St. Louis, Mo.,** has named Armin L. Klemm as supervisor of wood preservatives and special chemicals sales. At the same time, Harold W. Anway was named resident sales representative in Kansas City, Mo., replacing Mr. Klemm at that post.

**Graybar Electric Co., Inc., New York City,** has opened a new branch at 524 E. St. Louis Street, Springfield, Mo. R. L. Shuck has been named manager of the new branch.

W. F. Lang has been made sales manager of the Foam Rubber and Industrial Sponge Rubber division of **General Tire & Rubber Co., Akron, Ohio.** He will be responsible for sales



W. F. Lang

of latex foam rubber and rubber products to the shoe industry and similar applications. He will eventually head-quarter at the firm's Marion, Ind., plant.

**Rheem Manufacturing Co., New York City,** has promoted Carlos H. Horne from northern California regional man-



Carlos H. Horne

ager to assistant general manager of the company's western division.



Another **ROCHESTER PRODUCTS**

**GM** <sup>STEEL</sup> *tubing*

**ENGINEERING  
ACHIEVEMENT**

## Automatic Manufacture of Automotive Fuel Lines

**Fast • Accurate • Low Cost**



FROM the initial long-length coil of GM Steel Tubing to the final intricately formed product, complete with fittings and flared ends, the manufacture of Rochester Products *automotive fuel lines* is virtually *automatic*. Ingeniously designed machines assure *better, faster* production . . . effect *savings* that are *passed on* to the buyer!

This is a typical example of how Rochester Products engineers combine ideas, skill, experience and GM Steel Tubing to help hundreds of industries build *better products* for *less money*. Why not find out now how we can help *you*?

SEND FOR  
**FREE**  
BROCHURE



Entitled "*Better Products for Greater Progress . . .*" this new, illustrated, fact-packed brochure tells how GM Steel Tubing can help solve design, production and cost problems. Send for your free copy today.

SEE SWEET'S  
PRODUCT  
DESIGN FILE <sup>1a</sup>/<sub>Ro</sub>

**ROCHESTER PRODUCTS** DIVISION OF GENERAL MOTORS

ROCHESTER, N. Y., U. S. A.

ALSO MANUFACTURERS OF ROCHESTER CARBURETORS AND ROCHESTER CIGAR LIGHTERS



For More Information Circle No. 120 on Inquiry Card—Page 17

APRIL, 1954

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James O. Johnson has been named general sales manager of **Buchanan Electrical Products Corp.**, Hillside, N. J.



James O. Johnson

He is in complete charge of all internal and external sales operations.

The **Weatherhead Co.**, Cleveland, has announced the appointment of two veteran sales heads to new posts. The new Distributor Division, under the supervision of Gene P. Robers, is comprised of the former Automotive Standard Parts Division and part of the former Industrial Division. Lester J. Henderson takes over direction of the newly reorganized Industrial Division.

William R. Plummer has been appointed general sales manager of **Garland Manufacturing Co.**, Detroit.

Donald L. Price has been made sales manager of the Abrasive Division of



Donald L. Price

the **Norton Co.**, Worcester, Mass.

Wilbur E. Combs has been appointed assistant manager of sales development in the mechanical goods division of **United States Rubber Co.**, New York City.

Harry O. Walp, Jr., has been transferred to the New England district office of **F. J. Stokes Machine Co.**, Philadelphia, as a senior sales engineer.

With the establishment of its new Pacific Sales Division, the **Shellmar-Betner Flexible Packaging Division of Continental Can Co.**, New York City, has announced the following appointments. C. V. Ore is now district manager for the northern Pacific area, with headquarters in San Francisco, Calif. The district sales manager for the southern Pacific area, T. H. Morris, will headquarter at South Gate, Calif. In addition, it was announced that F. S. Hinkle is now director of product sales for the Shellmar-Betner Division.

**Meier Brass & Copper Co.**, Detroit, has been appointed by the **Beryllium Corp.**, Reading, Pa., as a distributor of Berylco beryllium copper strip and rod in Michigan, northern Ohio and northern Indiana.

Kenneth B. Gerrish has been named director of sales and Sidney H. Wilson, sales manager, for the new Mills Plastic



K. B. Gerrish



S. H. Wilson

Pipe Division of **Continental Can Co.**, New York City.

The **S-P Manufacturing Corp.**, Cleveland, has appointed the Donald B. Hunting Co., 7446 Vine St., Cincinnati 16, Ohio, its exclusive representative in that Ohio area.

Seven promotions have been announced in the **Plastics Division of Monsanto Chemical Co.**, Springfield, Mass. Robert U. Haslanger becomes director of sales for raw materials including monomers and formalin. The director of sales for coatings and adhesives is now Chester L. Jones. A third director of sales, for plastic products, is Edwin L. Hobson. The directors of sales will report to R. C. Evans, who has been serving as general manager of sales for the division. He now becomes director of marketing. Promoted to assistant director of sales were David S. Plumb, Opalin resins and compounds, industrial resins and polyethylene; Theodore S. Lawton, Vupak sheets, Ultron film, Lustrex and Resinox; and Stanley L. King, Saflex products. Finally, James P. Skehan has been named to the newly created post of director of field operations.

George E. Anne has been appointed vice president of the Brake Shoe & Castings Division of **American Brake Shoe Co.**, New York City. Mr. Anne has been with the company since 1925.

**Norton Co.**, Worcester, Mass., has named Bruno D. Hendrickson as abra-



Bruno D. Hendrickson

sive engineer in charge of the western New York territory.

**Sterling Abrasives Division, Cleveland Quarries Co.**, Tiffin, Ohio, has opened a new warehouse and office at 5801 Rising Sun Ave., Philadelphia.

Bancroft W. Henderson has been made director of sales for the **Organic Chemicals Division, American Cyanamid Co.**, New York City.

**Smythane Corp.**, Oaks, Pa., has appointed David Garrison to its Philadelphia district sales force. Mr. Garrison will work in central Pennsylvania as well as certain Philadelphia and New Jersey areas.

C. L. Kenny has been made manager of products for the **Quaker Rubber Corporation**, a division of the H. K.



C. L. Kenny

**Porter Co., Inc.**, Philadelphia. He will coordinate the activities of the factory with those of the sales force.

Additional News of Your Suppliers will be found following the Industrial Development section

# Users praise Phillips Cross-Recessed-Head Screws



BUCHANAN'S pres-SURE-tool is here assembled with Phillips screws by Harold Kennedy. "We simply cannot afford to have our products 'gummed up' by unsightly burrs and mutilated heads," says Albert Mittleman, Plant Superintendent and Production Manager. "It was this feature more than any other which so completely sold us on Phillips screws that we will continue to use them in all new products wherever design permits."



THE HIGH ENAMEL FINISH OF TITAN'S THERM-O-DIAL HEATERS is in no danger of costly damage when Phillips screws are used. "With ordinary screws," Richard K. Fleischman, Titan vice-president, points out, "driver slippage and insecure gripping of the driver bit enforced additional hardships on the driver tools themselves. Drivers last indefinitely with Phillips screws."



YANKEE METAL PRODUCTS' SEALED BEAM FOGLIGHTS are fastened with Phillips SEMS. "Increased production was immediately evident," says L. Fleischman, production manager, "in that the self-centering feature of the Phillips head made possible the application of power screw drivers. The high percentage of misses and rejects was eliminated. We have been using Phillips head screws since 1936 and we would most definitely not use any other type."



THE FASTENERS  
OF TODAY...  
AND OF THE FUTURE

**X** marks the spot  
... the mark of extra quality

American Screw Company • Atlantic Screw Works, Inc. • The Blake & Johnson Co. • Central Screw Company • Continental Screw Company • The Eagle Lock Company • Elco Tool and Screw Corporation • Great Lakes Screw Corporation • The H. M. Harper Co. • The Lamson & Sessions Company • National Lock Company • The National Screw & Manufacturing Co. • Parker-Kalon Div. General American Transportation Corporation • Pheoll Manufacturing Co. • Rockford Screw Products Co. • Scovill Manufacturing Co. • Shakeproof • The Southington Hdwe. Mfg. Company • Sterling Bolt Company • Wales-Beech Corp.

Your **BEST** Buy  
... regardless of  
price!



## WITT CANS and PAILS

WITT CANS and PAILS are designed and constructed to give you more service for your dollar. They withstand years of hard usage and abuse which wreck the ordinary container. Many WITT CANS and PAILS are still in excellent condition after 10, 15, yes even 20 years or more service. They're guaranteed to outlast 3 to 5 of the ordinary kind. Regardless of price, you get more for your dollar. Buy a WITT!

Compare WITT CAN and PAIL features with others on these points:

- STRAIGHT SIDES
- DEEP ROLLING CORRUGATIONS
- HEAVY GAUGE STEEL
- STRUCTURAL STEEL BANDS
- HOT DIP GALVANIZING
- PINCH-PROOF HANDLES
- STURDY LID

WITT CANS AND PAILS  
HAVE THE "RIGHT" ANGLE

*Witt Cans*

"Originators of the Corrugated Can"

### THE WITT CORNICE COMPANY

2127 Winchell Ave., Cincinnati 14, Ohio  
Please send me your FREE Catalog.

Name .....

Firm .....

Address .....

City ..... Zone ..... State .....

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# F.O.B.



## FILOSOFY OF BUYING

**C**REDIT an assist to Reader Ross Burnes, P. A. for Scripto, Inc., Atlanta, Ga., for sending us a copy of "We Like Salesmen!", which is reproduced below. It's a product of Stein Craftsmen, Atlanta, and graciously expresses a policy that many purchasing agents would like to have on record in their reception room. The original is attractively printed in two colors on india tinted stock, 8½ x 11, suitable for framing.

The small type in the lower left hand corner advises: "Additional copies available from Stein Craftsmen, 161 Luckie St., N.W., Atlanta, Georgia."

**S**TAGGERING under a topheavy departmental work load? The answer may be to stagger the load. That's the solution proposed by City

### *We Like Salesmen!*

*If* you call on us because you believe your product or service will benefit this company, you are welcome.

*If* you come to offer a suggestion which will improve any detail of our business, we are glad to see you.

*If* your proposal has merit, we want to see it, hear it, understand it; you are "up" on your subject—and certainly we want to learn. Not always can we buy—but we can always listen. Open Door and Open Mind assure you an attentive hearing.

*If* on occasion we cannot greet you promptly, please be patient . . . another good salesman may be telling us something worthwhile. Your turn will come promptly. We'll try not to waste your time—just as you'll be fair and not waste ours.

*If* you feel—after the interview—that you did not receive adequate consideration, say so frankly. Being human, we sometimes have "bad days" and disturbing distractions; so give us a rain-check.

We, too, have salesmen — and want to have them well received. We know the disappointments, successes, heartaches and satisfactions in the life of every conscientious man who sells. So you are received here with the same thoughtful consideration we hope our men may receive. Moreover, because we like and often use ideas our callers bring, it is literally and emphatically true that . . .

**WE LIKE SALESMEN!**

ADDITIONAL COPIES AVAILABLE FROM  
STEIN CRAFTSMEN • 161 LUCKIE ST., N. W.  
ATLANTA, GEORGIA

P. A. Joseph Erickson of Quincy, Mass.—an annual work schedule designed to spread the work of the purchasing department evenly over the entire year, thus eliminating periods of peak and slack activity in the office. Mr. Erickson believes it will indirectly result in more efficient purchasing procedures and substantial economies. He says:

"Efficient purchasing can be obtained more easily when the office has sufficient time to devote to individual contracts. When the office is under pressure of writing stipulations, opening and tabulating bids, and letting several contracts almost simultaneously, it is difficult to buy efficiently and in the best interests of the city. Under the annual work schedule, the routine of advertising for bids and letting contracts is staggered through the year, so that the purchasing department will have adequate time to give to each contract."

**SELLING** techniques are reverting to the good old days of the patent medicine man, who set up his tent in the village square and trotted out his minstrel banjoist and Indian chief to lure the customers. We have it on the word of Allan Keith, former stage and TV actor turned business-show producer, that business spent \$6 million in 1953 to put its shows on the road, and will double that expenditure in 1954. He cites Servel, with two road companies recruited on Broadway to introduce a new line of refrigerators. Each company included 10 dancers, 6 showgirls, 12 actors, 5 singers, 2 pages, a comedian, a narrator, 4 musicians, 4 stagehands, a sound man, wardrobe mistress, projectionist, company manager, unit manager, and assistant director. Five of the big talent agencies have departments specializing in business shows. Step right up, buyers. See the girls and place your orders.

**STATE** P. A. George Cronin (Mass.) suggests that all state institutions cut down on their coffee rations. "People in our institutions should not be served coffee when the people outside, who are paying the bill, cannot afford to purchase that commodity," he told the directors. One more bit of evidence that crime does not pay.

APRIL, 1954

# We're Glad...

**TO BE KNOWN  
BY THE COMPANY  
WE KEEP!**

	<b>GENERAL ELECTRIC</b> Used Laminum Shims for 20 years	
Used Laminum Shims for 15 years	<b>THE Lorain</b> Used Laminum shims for 25 years	Used Laminum Shims for 29 years
		
Used Laminum Shims for 29 years	Used Laminum shims for 37 years	Used Laminum Shims for 20 years
<b>WORTHINGTON</b> Used Laminum shims for 24 years		
<b>Ingersoll-Rand</b> Used Laminum shims for 25 years		<b>LANDIS TOOL</b> Used Laminum Shims for 20 years
Used Laminum shims for 20 years		

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No obligation.



**SHIM HEADQUARTERS  
SINCE 1913**

Check our Stampings Division  
— for short run or  
high production stampings.

Here are a few of our older customers — who with hundreds of other companies use the foolproof, accurate Laminated Shim method to gain exact fit and save time in assembly... and at the same time gain a "built-in" adjustment for service wear. Get the full story — find out why so many design leaders specify

**Laminated Shims!**



2404 UNION STREET • GLENBROOK, CONNECTICUT

For More Information Circle No. 126 on Inquiry Card—Page 17

For More Information Circle No. 127 on Inquiry Card—Page 17

**YOU SAVE ON ASSEMBLY COSTS**—This actual, *life-size* photograph of G.E.'s  $\frac{1}{4}$ -hp motor shows you how compact the new line is. Its smaller size and lighter weight (up to 50% lighter!) means easier handling, less assembly fatigue.



## Let's Face the Facts

**L**OOSE talk and political maneuvering are doing their level best to get the business community and the public generally into a state of thorough confusion as to the conditions under which we are trying to work and do business. Never within memory have there been such diverse and contradictory interpretations of the same set of basic facts.

We're headed for depression; the outlook is bright. Unemployment is looming as a major problem; we're consolidating our gains. Industry can't make a profit; stock values have set new highs in 1954. Prices are weak; the cost of living is rising. Subsidies must be removed; labor must have new and greater benefits. Our stockpiles are too high; the public isn't spending enough. It's the letdown after war; we can't have both peace and prosperity. We're suffering the hangover of past abuses; the present administration is mishandling our economy.

These voluble contradictions can be explained only by looking to the motives of interpretation. Most of the vocalists seem to be primarily interested not in the facts themselves, but in seeking to discredit some one else or in getting a bigger share of the pie for themselves. They bend the facts to suit their purpose. With such divergent aims, we can scarcely expect to find any objective basis of agreement.

Yet the facts are there, and it's high time that we face them:

We have just been through a period of abnormal industrial activity, predicated on high military demand and the wastes of war. We only delude ourselves if we take these abnormal conditions as the standard of comparison. By any reasonable standard, we are in an exceedingly strong and healthy position.

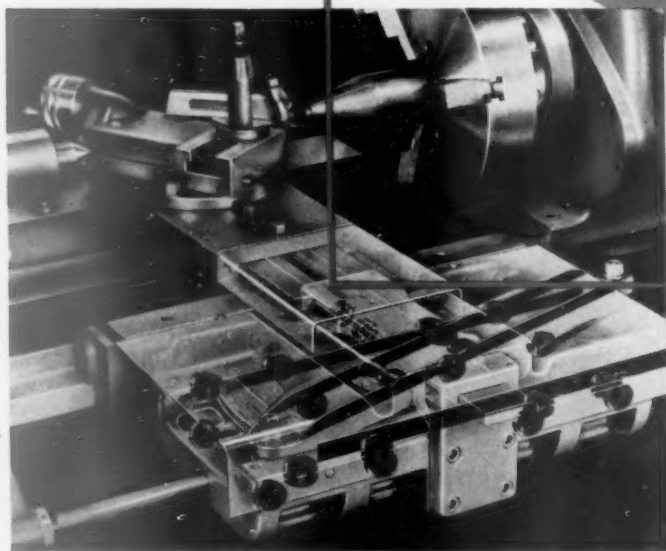
The outlook is for accelerated progress and activity in our civilian economy. Rapidly increasing population trends and the wholesome desire of all to share in the higher standards of living offered by modern technology will tax our productive capacity to keep up with growing demand.

Our private enterprise system provides the opportunity and the incentive that can spark this progress. Keen, clean competition is the most effective spur to efficiency, improvement, and greater value for all.

We are all on the same team. We must work together to go forward together. What's good for me is good for business, and what's good for business is good for me.

*Stuart F. Hemenway*

**BALL**  
**BEARINGS**  
**make**  
**a product**  
**BETTER**

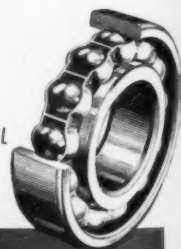


Twenty New Departure ball bearings are used in the Monarch Machine Tool Company's antifriction bearing taper attachment. There are 12 single-row bearings, 8 double-row bearings. All are permanently lubricated.

Many advantages of the Monarch lathe taper attachment are—according to its maker—the result of New Departure **ball** bearings. For by their use, backlash, friction and lost motion are almost entirely eliminated . . . smoother, more accurate tapers are possible. And Monarch's taper attachment takes heavy cuts even when boring or turning acute angles, for **ball** bearings give rigid support under both radial and thrust loads.

**Call your New Departure sales engineer. Have him show you how New Departure ball bearings make a good product even better!**

NOTHING ROLLS LIKE A BALL



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**BALL BEARINGS**

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For More Information Circle No. 156 on Inquiry Card—Page 17

# Highlights

This issue's important features summarized for the busy reader



More and more companies are discovering that efficient purchasing is the **Key to Profits**—only to come up against the corollary question: What's the key to efficient purchasing? A management expert who has been specializing for the past ten years in the purchasing field presents his answer in the article on page 67, with a convenient analysis and rating form that will help you detect the strong and weak points of your own buying organization and methods, show where improvements can be made, and provide a checking method on progress.

Sitting in an **Office Chair** can be fatiguing work unless you have the right type of chair to sit in. You spend one-third of your life in this position, and your health, as well as the quantity and quality of your work, are vitally affected. The article on page 72 tells what to look for in this everyday equipment.

When there's a major change in **Product Design**, it's not only the manufacturing departments that are concerned. Purchasing has its full share of the problems. More important, purchasing can contribute a large share of the know-how to make the change effective and profitable. Turn to page 86 for a report on how one purchasing department met this challenge.

Prices going up? Suppliers asking for more money on new orders? What can the purchasing department do to stop or reverse the trend? The story on page 79 tells what happened when one purchasing department took direct action by adopting the policy of **No Price Increases**. Here is a realistic and practical approach to a buying problem that is too often permitted to go unchecked through the mistaken notion that nothing can be done about it.



A disastrous fire wiped out a busy manufacturing plant overnight. Facilities and materials were destroyed. Vital records, too—including purchasing records—were gone. Yet, within three days, the company was **Back in**

**Production** on a limited scale. Turn to page 92 for a report on how purchasing ingenuity, good trade relations, and hard work "did the impossible".

To be effective, a purchasing set-up and program must be **Fitted to the Need**. A highly centralized department did very well when Carrier Corp. was producing custom built equipment and working on defense orders. But it wasn't adequate when the company simultaneously faced the problems of reconversion, tremendous expansion, and the change-over to mass production of standard product lines. How these problems are being met and solved by a new divisional organization plan, and with policies that look to the future, is told on page 96.

A new series of personal interview articles, in straightforward question and answer form, starts with the article on page 70. Our Washington editor visits the men responsible for national policy, and asks them the questions that are on your mind, the questions you would ask if you had the opportunity. The first of these interviews is with M. J. Meehan of the Commerce Department, who gives you the Government's thinking on the **Outlook for Business Activity** for the balance of 1954 and the Government policies and actions that are likely to affect all business during the months ahead.



Does your company operate a **Motor Delivery Fleet**? If so, you will be interested in the article on page 94, a searching inquiry into this type of equipment and its long range effect on delivery costs.

**Pool Purchasing** is a technique that has substantially speeded up procurement for production of new atomic weapons in our defense program. What it is and what it has accomplished are told on page 113.

Two important articles on **Purchase Law** appear in this issue. Turn to page 84 to learn about purchases made for sale or return; to page 118 to know your rights when a seller breaches the contract.

## COMING—NEXT MONTH

The Sixth Annual "Purchase For Profit" Issue

Your Guide To Value Buying In 1954

# Do You Buy Steel?

## Here's a check list for evaluating suppliers

Steel has been in such short supply for so many years that there has been a tendency toward lower standards. With the situation now reversed, it may be well to raise our sights and give the production or fabricating departments a break.

With this in mind the following check list may be worth consideration.

### First, on the character and capacity of the supplier:

- ☐ Is the supplier a good dependable company with a wide range of steels actually in stock so I can take full advantage of quantity differentials and save time in ordering and other office details?
- ☐ Am I establishing a business relationship with a company which will be able and willing to supply me with steel at fair prices next month or next year—even if demand should again exceed supply?
- ☐ Can I return the material if it has not been processed and I find that I can't use it?
- ☐ Can I count on the supplier to settle any reasonable difference of opinion to my satisfaction? Is the supplier customer-minded?
- ☐ Does the supplier have, not only the interest, but also the ability to carry my account in times of national stress or a possible financial difficulty?

### Second, concerning the material:

- ☐ Is the steel of known, uniform quality so that I know what can be expected of it and can be sure of getting steel of the same uniform quality next month or next year?
- ☐ Is the steel accurate as to size or gauge so that no time is lost in extra processing? Is scrap minimized or eliminated?
- ☐ Is the steel in good condition? Has it been carefully stored, handled and shipped so that it will arrive ready for use?

### Third, concerning the service:

- ☐ Can I depend on clean accurate cutting so that the steel will be immediately available for use without further cutting or preparation?
- ☐ Can I be sure of correct weight?
- ☐ Will the steel be delivered when promised so I will get it when I need it, even on very short notice?

No source is perfect, and we certainly do not pose as such. However, we have been serving industry—with good sound steel from stock at fair prices for over one hundred years. And we have been working with our customers in many other ways from helping with finances to solving problems of fabrication and inventory control.

We stand ready to serve you well whenever you call.

**JOSEPH T. RYERSON & SON, Inc.**

**CARBON, ALLOY AND STAINLESS STEELS IN STOCK FOR IMMEDIATE SHIPMENT**

STEEL SERVICE PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI • DETROIT • BUFFALO  
CLEVELAND • PITTSBURGH • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

For More Information Circle No. 157 on Inquiry Card—Page 17

## The Key to Purchasing Efficiency



By Alfred W. Sutter

**L**ONG neglected, the science of purchasing has attained increasing importance with the recognition by Management that in the purchasing operation we are dealing with a very substantial part of the manufacturing dollar, frequently the greatest single factor of cost.

Figures from the U. S. Department of Commerce show, for instance, that an average of 58% of what the Department terms "the manufacturing dollar" goes to procure supplies, equipment, and materials.

The procurement function should not be narrowly defined, however, as a matter of prices paid for supplies. It involves many other factors (the best rate of inventory turnover, for example), all of which are ultimately reflected in the company's profit picture and vitally affect the firm's competitive position.

Today's purchasing executive, besides negotiating with vendors for the purchase of materials, is concerned with a wide variety of responsibilities. These may range from advising management on capital expenditures to checking the physical layout of the store room. In the last analysis, however, the major burden of his job is avoiding waste and loss

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THE AUTHOR heads the consulting firm of Alfred W. Sutter & Associates, New York, an organization specializing in the field of Materials Management, and believed to be unique in its concentration on purchasing and allied functions in industrial management. Since its establishment in 1945, the organization has successfully served manufacturers in such diverse and technical fields as plastics, electronics, and aeronautics.

He has had practical experience as Purchasing Agent, Purchasing Manager, and Director of Procurement, and served as Administrative Officer of the Eastern District Procurement Division, Air Technical Service Command, A.A.F., and prepared the official "Standards of Procurement Analysis" for that Division. Other publications include "Effective Purchasing in Small Business" and "Judging Your Purchasing Efficiency", written for the Small Business Administration.

He is a member of the Society for the Advancement of Management, the Institute of Radio Engineers, and the Society of Plastic Engineers.

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—discovering and correcting profit leaks in his department that may have been overlooked through habit or long familiarity.

The purpose of this **Guide** is to focus attention on all aspects of the purchasing function and evaluate their significance. The **Basic Questions for Evaluation** and the **Tangible Factors** are self-explanatory. At their completion, the appropriate percentages marked on the **Appraisal Graph** will give you a visual picture in chart form of the present efficiency of your purchasing and allied functions.

Rush orders . . . chronic overtime for the stockroom . . . cash discounts lost because too much time elapsed—all these are classic bugaboos for business. All, or any one of them, can affect a firm's profit and potential.

### Rating Your Firm

Recently, one of the fastest growing small firms in the electronics field found, during a check-up, that purchase orders were costing them a minimum of \$9 each to process. Yet, \$5 orders for memo pads and

# TANGIBLE FACTORS

ALFRED W. SUTTER & ASSOCIATES  
Consultants in Materials Management

USE FIRST FOUR ITEMS AS GUIDE TO COMPUTE PERCENTAGE FIGURES DIVIDE \$ FIGURES BY TOTAL PRODUCTION COST AND DIVIDE EMPLOYEE FIGURES BY TOTAL NUMBER OF EMPLOYEES	Post Three Periods Use Dollars Only (No Cents)							
	19	%	19	%	19	%	19	%
Total Sales								
Total Production Cost	\$							
Net Profit								
Total Number of Employees	#							
Number of Purchase Orders								
Dollar Volume of Purchases	\$							
Number of Employees								
Purchasing	#							
Receiving	#							
Inspection	#							
Stores	#							
Overtime Salaries	\$							
Total Salaries	\$							
Other Administrative Costs	\$							
Total Administrative Cost	\$							
Cash Discount								
Secured	\$							
Lost Due to Elapsed Time	\$							
Loss through Depreciation,	\$							
Spoilage, Obsolescence								
and Pilferage								
Purchase Budget	\$							
% Over								
% Under								
Average Inventory Turnover								

\$10 orders for staples were going out regularly. Because the firm was newly established—was, in fact, considered the “Young Turk” of its field—its management was spread thin. The Purchasing Agent, like many another P.A., simply could not keep his eye on “the small ones”.

To help overloaded executives recognize some of the danger points not only in purchasing but in the broader field of materials management, we have designed this Evaluation Guide.

It is not intended to supply quick or sure-fire solutions. We in the field of Management Engineering do not deal in stock answers. Stated very simply, we believe that applied common sense plus technical

guidance are the basic tools for finding out what is right about a business operation (and therefore should not be disturbed) and what needs change.

In short, the object of the Basic questions, as well as the Appraisal Graph and Tangible Factors listing, is to start you thinking constructively and asking some pointed questions:

- Is inventory topheavy?
- What is your percentage of payroll overtime?
- Do vendors come in the right door and move along, or “get stuck”, taking up the valuable time of top-drawer executives?

In a manner of speaking, the Guide

is a gauge of your firm's health. Properly used, it will show graphically and simply the strength and weakness of your organization and its manifold operations.

## Basic Questions

1. Do you have an up-to-date chart of organization clearly defining the duties and responsibilities of each officer?
2. Do all your employees report to one supervisor only, or are there duplications of authority?
3. Do you know the cost of a Purchase Order, including clearing the invoice and writing a check?
4. Do you have standards to control rush orders, or is money wasted by indiscriminate use of “Rush”?
5. Are all purchases made against written requisitions, or do you overbuy because of verbal requests?
6. Are requisitions prepared against bill of materials, or by guesswork?
7. Do you have a simplified method of placing small orders, or is the cost of the Purchase Order greater than the value of the material?
8. Are all contacts with vendors handled initially by Purchasing, or is the time of production and executive personnel wasted needlessly?
9. Do you have a purchase budget or any other plan that you can use as a guide?
10. Do you have a follow-up system, or do you know that something was not delivered only if there is a production delay?
11. Are delivery receipts and inspection reports sent to Purchasing without delay, or do you lose cash discounts?
12. Do specifications provide the Inspection Department with a basis for testing deliveries, or do they have to check back, causing delays?
13. Are Receiving, Inspection, and Stores set up for the most efficient flow of work?
14. Does the physical inventory count match your stock records?
15. Do you know the most profitable rate of turnover for each item in your inventory, or are you losing money through over- or understocking?
16. Do your purchase records show your previous prices and suppliers, or do you have to guess when reordering?
17. Are you satisfied with the co-operation between departments?
18. What percentage of your payroll for Purchasing, Receiving, Inspection, and Stores is for overtime?
19. Are you satisfied with your office procedures, and do you get all the statistics and data you need?
20. Have you analyzed the underlying causes of what you feel is your major headache?

# ALFRED W. SUTTER & ASSOCIATES *Consultants in Materials Management*

## APPRAISAL GRAPH

ENTER PERCENTAGES IN ACCORDANCE WITH THE EFFECTIVENESS OF THE FUNCTION. LEAVE BLANK THOSE FUNCTIONS THAT DO NOT APPLY TO YOU. OBJECTIVE JUDGMENT MUST BE USED IN DETERMINING VALUES.

PERCENTAGE OF EFFICIENCY	ORGANIZATION		INTER-DEPARTMENT RELATIONS	PURCHASING BUDGET	COST ACCOUNTING	REPORTS	OFFICE PROCEDURES	CLERICAL PERFORMANCE	INSPECTION CONTROLS	PURCHASE CONTROLS	INVENTORY CONTROLS	MARKET ANALYSIS	SPECIFICATIONS	VENDOR CONTACTS	PERSONNEL RELATIONS	EMPLOYEE TRAINING PROGRAM	JOB EVALUATION	EXPENSE CONTROL	FILES & RECORDS	EQUIPMENT	METHODS	FLOW OF PAPER	FLOW OF MATERIAL	QUALITY CONTROL	SALVAGE CONTROL	STANDARDS	EXPEDITING	STORES CONTROL	RECEIVING CONTROL	SCHEDULING	KEY PERSONNEL	YOUR OVERALL RATING
	100 %	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5												
EXCELLENT																																
ROOM FOR IMPROVEMENT																																
POINT OF DANGER																																
IMMEDIATE ATTENTION																																

# THE OUTLOOK FOR INDUSTRIAL ACTIVITY

An interview with M. Joseph Meehan  
Director, Office of Business Economics  
U. S. Department of Commerce

To start the ball rolling, Mr. Meehan, here's a question that is of concern to all purchasing agents. Are inventories lopsided?

Inventories have been out of balance and are being reduced. Since last September there have been regular monthly declines. I am speaking of total business inventories. Since this corrective movement is apparently still in progress, you could say that total inventories are not yet where business wants them. But in some industries, of course, the adjustment has probably been completed.

**Have inventory-sales ratios changed?**

In the aggregate, inventory-sales ratios have not been reduced, since there has been a reduction in sales as well as in inventories.

**Will it be harder to get durable goods inventories down than it**

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Prior to entering government service, Mr. Meehan was associated with the Economics Division of the International Telephone & Telegraph Company, and served for two years as faculty consultant at the Littauer School of Public Administration, Harvard University. In 1940, he was appointed alternate member of the Temporary National Economic Committee, and subsequently, for three years, was Director of the Progress Division of the War Production Board. He joined the Department of Commerce staff as Regional Specialist, Latin American Division, Bureau of Foreign and Domestic Commerce; edited the *Survey of Current Business*; and became Chief Statistician of the Office of Business Economics, which he now heads.

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**PURCHASING's** Washington editor, A. N. Weckslar, interviews Mr. Meehan (right) on the state of the nation from a business viewpoint.



**would be in respect to soft goods?**

It should be remembered that inventories had to be built up after the steel strike, that stocks of durable goods had been pulled down by production controls, and that the aftermath of the invasion of South Korea generally was marked by a strong demand for consumer durables as well as by sharply increased demand for military hard goods. Included in our total inventory figures are the raw and semi-processed materials needed for continuing military production, as well as stocks of consumer durables which have to be adjusted to the changed demand picture. Inventory-sales ratios in the non-durable goods industries have not been particularly high.

**Do you expect a continuing substantial demand for military hard goods?**

In discussing the rate of military spending, there has been a natural tendency to stress the reductions made and to be made. This puts in the rear of the discussion the figure of over \$40 billion of military expenditures scheduled for this fiscal year. Defense expenditures are moving down, but outlays for military hard goods will continue high and some categories will show a further increase. There will be changes in the composition, with declines programmed for some commodities.

**What about the rate of new orders?**

New orders placed with manufacturers have been generally falling since last June. In part, this has been associated with the adjustment of inventories. The substantial decline in new defense contracts has also, of course, worked to bring down the rate of new orders. Total

unfilled orders are down from a year ago, but are more than double the \$25 billion figure at the outbreak of Korean hostilities.

**Are there any cushions against the impact of military cutbacks?**

Yes. Reduced expenditures have permitted lower taxes, and further reductions have been proposed and are being considered. Business has already expressed its intention to intensify selling efforts and to get civilian orders to take up the slack in its defense work. Public bodies are well aware of what is happening, and are putting into effect all their machinery for smoothing the readjustment for individuals.

**What about schools, roads, public works?**

There is a large backlog of essential public works. The needs are great. To an extent depending upon community readiness and ability to finance local improvements, economic activity can be stepped up by action on deferred institutional projects such as schools, roads, and hospitals.

**That would mean that the public purchasing agent would have a big job to do, wouldn't it?**

It certainly does. The acceleration of public works programs means hard work for the purchasing agents involved. The terms under which they buy are often complicated, but in these projects they should have all the assistance that the sellers can supply.

**Will tax adjustments stimulate business?**

Yes. To the extent that tax reductions make more money available for private spending, the market can be expanded. It is rather difficult to estimate how much extra would be spent, but we can assume that anyone who has something to sell will try to pry that additional buying power loose.

**Does this mean that the consumer will have more money with which to buy?**

Exactly. The reduction in personal taxes effective in January approximated \$3 billion a year. And since the withholding rates were promptly adjusted, the consumer benefited promptly. It is true that there was a partial—about one-fifth—offset in

the raised social security tax. But the consumer is better able to spend with his taxes reduced. He will decide whether that amount is to be regarded as "spending" money or "having" money. Of course, taxes are only one of the factors influencing disposable income, and the aggregate income available for spending is also dependent on the course of the adjustment that is now underway.

**What has happened to personal income? Has the shorter work week cut significantly into the pay check?**

Personal income has continued at a high and relatively stable rate. The average factory work week has been moving down, as has factory employment, so that manufacturing payrolls have been reduced. However, in other industries the total of payrolls and non-wage incomes have been steady or higher, so that the drop in total income has been small.

**If income remains firm, does that mean that prices will tend to stay up?**

Here again it will be up to the consumer to decide how much of his money he wants to spend, and he's going to be looking for good values. Where the role of consumer is played by a professional—as in the case of the purchasing agent—the pressure toward lower prices is always great. In a period of intensified competition, he has a better chance of getting results. However, the general price picture continues rather stable at this time.

**Purchasing agents buy a lot of services, such as utilities and transportation, in addition to actual goods. Will new technical developments bring about a reduction in such service costs?**

Cost reduction is an aim in itself, of course, not simply a by-product of heightened competition, though competition may be the spur. The railroads' Diesel program is nearing completion, and we have not yet scratched the surface of civilian applications of atomic energy. Everybody agrees nowadays that research and development expenditures pay their way, no less in cost reduction than in the introduction of new products.

**Will the trend in new plant facilities and automatic produc-**

**tion equipment be able to bring about lower costs?**

A very sizable portion of the high expenditures of business for new plant and equipment has resulted from the desire for new, modern, lower-cost productive facilities. The cost structure in most industries is affected by the standards set by the new equipment. As cost reductions are demonstrated, the trend toward modernization and replacement will be further stimulated.

**On that basis, do you expect plant modernization to continue at a high level?**

The business capital outlays devoted to modernization are likely to rise, according to the information we receive from businessmen throughout the country. As some industries are passing the peak of their expansion program, they are in a position to turn their attention to capital outlays for the purpose of increasing efficiency.

**What about construction generally? I am thinking now about housing and home repairs.**

The construction industry is looking forward to another good year. With about a million housing starts expected, the trend toward additions to and renovations of existing homes, and fix-it projects in general, seems also to be on the rise.

**Do you have any comment about the expanding use of plastics and chemicals?**

The plastics and chemicals are among our fastest growing industries. We reviewed these rapidly expanding industries in our "Markets after the Defense Expansion" bulletin, in which we surveyed the growth prospects of the American economy.

**In the period ahead, will we need less industrial materials from abroad?**

While there have been shifts in the composition of our imports of industrial materials, the long-term trend of such imports has been upward, along with the expansion of our domestic economy, at a rate close to 3% a year. Minerals and forest products have shown an above-average increase in recent years. Over \$5 billion of American capital has been invested in foreign mining and petroleum installations.

# Don't Let Office Fatigue Destroy Efficiency

Correct posture chairs make the day more comfortable and more productive

By A. Wyn Williams



What to look for in an office chair  
for comfort, health, and productivity

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Arm and shoulder comfort | 4. Correct pitch            |
| 2. Lumbar curve support     | 5. Body doesn't touch metal |
| 3. Pressure off coccyx      | 6. Leg comfort              |

**F**EW realize that, comparatively speaking, the chair as a common object of furniture is only a quite recent acquisition of Western Civilization. It is still almost unknown in many other civilizations, which still believe that man is a reclining or squatting and not a sitting animal. It is true that there were chairs in ancient times but they were ceremonial objects of authority—the thrones of kings or religious dignitaries—to be occupied for a brief period of time on rare occasions. It was not the case in olden days that a person would have to be glued to a chair some eight hours a day—or one-third of his adult life.

Chairs began to come into common use only some four centuries ago, and only the rich could at first afford them. They were made after the pattern of their ancient predecessors, for pomp and display. There was little thought given to their utilitarian and hygienic values.

When the records-keeping demands of a constantly stepped-up Industrial Age elevated the business office to a key position in the production chain, it brought personnel by the millions to man the countless machines that have been devised to manufacture records. They had to sit on office chairs that were the lineal descendants of the display chairs of four hundred years ago, thoroughly unsuited for long hours of sitting. It was not, however, until studies began to be made (due to labor shortages, first in World War I and to a more intensified degree in World War II) as to what inter-

Illustrations by courtesy of the Shaw-Walker Company

ferred with maximum productivity, that the reasons for their unsuitability were discovered.

### What Causes Fatigue?

The old-fashioned chair is a first class promotor of that prime enemy of productivity—physical fatigue. Compared with the factory or manual worker, the actual amount of physical hard work performed by the office worker is negligible, yet at the end of the day many are physically exhausted. Long before quitting time fatigue displays itself in various forms of restlessness, frequent trips to the water cooler, long breathers for a cigarette in the washroom, increasing frequency of errors as the day wears on, etc., etc. And what of the executive, junior or higher? The "tired businessman's feeling" at the end of the day has been made the butt of many jokes, but it is nevertheless a fact, even on days when pressure of mental work has been light.

What brings about this fatigue in the bodies of office workers who do not engage in heavy physical exertion, with symptoms similar to those doing heavy physical work? It is partly an unbalance in the supply of oxygen in the blood stream. Normally it takes 58 seconds for the heart to pump the blood to every part of the body and back. In the course of this round-the-body journey, the lungs expel the carbon dioxide that is the result of supporting the bodily process and replace it with oxygen. To keep the body in tone, the replacement of carbon dioxide with oxygen should be in balance.

In the case of the man doing heavy physical work, a backfill of carbon dioxide builds up in his system because of extra physical exertion. Fatigue becomes cumulative until in extreme cases, if rest does not supervene, the workman becomes thoroughly exhausted and stupor forces an end to exertion.

In the case of the office worker who becomes fatigued there is the same unbalance built up, but from a different cause. Interference with the proper circulation of the blood prevents a proper replacement of the blood stream with fresh oxygen. The longer this continues, the more fatigue sets in.

We shall presently see how an improper office chair contributes to this. That it does is incontestable as a very large Insurance Company found out. It discovered that 77% of policy writing errors occurred in the afternoon. They were caused by

fatigue and practically disappeared after the staff was equipped with new chairs designed to correct bad sitting postures.

But proper chairs not only eliminate fatigue; they also have been found by experience to reduce materially the incidence of certain prevalent forms of illness among office workers. Backaches, headaches, leg aches, shoulder aches, and neck pains are some of the minor discomforts of which office personnel complain. Ulcers, especially duodenal ulcers, are attributed to wrong sitting postures for extended periods to which office workers are subjected.

### Discomfort Lowers Efficiency

It can be easily appreciated how efficiency is impaired and the morale of office workers lowered when they work under conditions of discomfort. How much this is costing companies in lowered productivity can be appreciated by a thorough survey a leading manufacturer of office furniture conducted in Philadelphia and Chicago. They found from interviewing hundreds of workers that from 74% to 78% suffered from some form of discomfort after they had been at their desks for a portion of their working day. The point of discomfort, all of which a properly modern engineered chair takes care of, was proportioned as follows in the case of 1821 office workers complaining of occupational discomforts:

Arms and Shoulders 18%

Base of Spine	38%
Lumbar Region	20%
Derriere	8%
Leg	6%

What can the purchasing agent do about helping office productivity (anywhere from 5% to as high as 50% in some cases) when procuring office furniture? All he can do is to furnish the employee with a chair that will help him to cultivate the correct posture so that there is

(1) No interference with the blood circulatory system;

(2) No strain placed on certain controlling nerve centers;

(3) No build-up of muscular tensions;

(4) No build-up of excessively toxic conditions in the digestive tracts.

### Designed to Fit

The old fashioned chair tended to interfere with the proper circulation of the blood by being of an improper height for the average person. When chairs began to come into use in the 16th Century, they were designed for the human giants of the race, the six foot (and over) Nordics. Unfortunately, most of us—and especially the vast majority of female office help—have been a little bit more stunted by Nature to the five-foot-eight size, and less. The result of the chairs having been designed for oversized humans, rather than the average size, is that the height of the seat of the chair, from the



These two stenographer type chairs are identical in their engineering except that the seats are differently sized for the derriere comfort of the occupant, according to whether she is the petite type or her heavier built non-dieting sister.

floor, had become standardized over the years at 18" and over.

This is excessive for the average person, for whom it should not be more than 17½" high, and even more so for the less-than-average height person. When the seat of the chair is too high, the person's legs are supported at their back by the front of the seat. When this happens, circulation in the main arteries of the leg structure is interfered with. This is sometimes evidenced by the foot "going to sleep" or feeling numb.

The height of the seat of the chair from the floor should be such that the feet will support the person's legs almost free of the front edge of the chair. This permits circulation of the blood in the legs to go on in a normal manner and prevent a back-fill of excess carbon dioxide in the blood in that part of the body so as to cause discomfort in the legs and, eventually, general body fatigue. All office chairs, therefore, should be so constructed that higher or lower adjustments can be readily made to fit taller or shorter persons.

Lowering or raising the height of the chair is not, however, the whole story of wrong heights in old-styled office furniture. As a corollary of chairs being made for the oversized human rather than the average sized, desks also were too high. They had been standardized at 30½". For the average person they should be no higher than around 29". If you give the office employee a chair that he can lower to suit his height and leave him with a desk that is too high, he will be subjecting his arms and shoulders to muscular tension by being forced to raise his hands throughout the day to high heaven, as it were, to reach his desk. Therefore, the modern desk is also adjustable to fit the user's height so that the benefit from proper blood circulation in the legs is not wasted by discomfort and tiring in other parts of the body.

#### For Correct Posture

But the legs are not the only potential contributors to improper blood circulation. If a person in a sitting position slouches forward, the pelvis is tilted forward and the abdominal muscles sag outward. The chest is flattened, bringing unnatural pressure on the lungs and heart. These two organs, the key ones in keeping the system toned up with a fresh supply of oxygen in the blood stream, are crowded out and unable to function at their best.

Also, when the body slouches, the

digestive organs—the stomach and alimentary tracts—are pressed together. This impedes the natural flow of the digestive juices, setting up a toxic condition in the lower abdomen. Hence splitting office headaches and grouchy office tempers, which in time develop into ulcers and other digestive troubles.

The properly designed office chair will compel its user to sit correctly and discourage the tendency to slouch. It corrects bad posture where it exists and ensures the retention of good posture. At the back it gives solid support to the user by firmly meeting the slight curves of the spinal column.



This executive-type swivel office chair has all the "posture" features of the properly designed stenographer chair. The support is rigid, and arms have been added—all in keeping with the different type work for which it is used.

The lumbar curve balances the body between front and backward gravity pull. This support to the spinal column at the point where the body is more devoid of solid support in the way of ribs tends to keep the spinal column in a vertical position. It is a law of gravity that when a column is in an upright position there is no pull needed to keep it in such a position. The same principle operates with the body. When it is kept erect, the muscles do not have to operate against the law of gravity to keep it in position. They are therefore more relaxed. Another source of fatigue is removed.

This lumbar support in the executive type chair is rigid. He can always avail himself of it by assuming the right sitting posture. In the case

of the stenographer her work calls for more movement. Therefore the back of the stenographer type chair should be adjustable so that it can be brought forward or backward. This keeps the body from the hips up in a vertical position and insures contact at all times with the back support.

#### Support Without Pressure

Also, since stenographers vary in height and the position of their lumbar curve may be higher or lower by some 4" according to height, the back should be capable of being raised or lowered to ensure the proper support of the back when a different sized person occupies the particular chair. The tension on the back of the chair should also be adjustable to provide constant contact with the body and give needed support at all times.

One more feature that is important in the well-engineered office chair is to see that the end of the spine—the coccyx—is not subjected to pressure. The end of the spine contains delicate muscles and sensitive nerves and any interference with their proper functioning can result in aches and pains in various parts of the body that the sufferer would not believe were due to abuse at this part of the body. Therefore, to relieve pressure at the base of the spine, there should be an open space at the back of the chair.

#### Relaxation Pays

In the executive type chair, as opposed to the stenographer type, arms are provided. In all other respects the principles of sound engineering are similar. The same principle of relieving tension applies. The arm rests should permit free movement of the arms to ensure relaxation. In fact, arms should be able to hang so the elbow will not touch the arm of the chair when sitting upright and in correct position.

The modern office chair responds to the laws of gravity, of the human body, and of common sense, without losing about the only merit that recommended chairs in the middle ages—style. If the claim is true that modern chairs add from 5% to 50% to the productivity of office workers, it can be well realized what a sound investment they are. But assuming that they only produce five minutes more work a day, it can be readily seen that they would pay for themselves in a little less than a year, against the normal ten-year write-off customary on office furniture.

# Should We Accept RECIPROCITY As A Business Policy?

The pressures for reciprocity in buying and selling are building up again, as competition heightens. This tendency to do business with the man who does business with you is, perhaps, as old as human nature. However, in today's complex organization of modern industry, it has become a difficult and controversial problem. We sought the reaction of purchasing men to the idea of reciprocity in general and to some of its ramifications. The combined answers follow.

① Have you noticed any recent increase in the pressure on your department to buy on a reciprocity basis?

?

- (a) By suppliers' representatives?  
(b) By your own sales department?



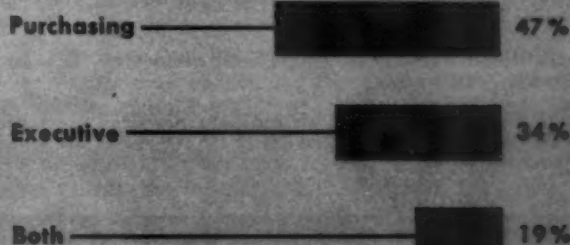
② Does your company have any written statement of policy on reciprocal buying?

?



③ Are reciprocal buying decisions made in the purchasing department or at the top executive level?

?



④ Regardless of formal policy, do you in general make it a practice to give preference to your company's customers in your buying, provided that their quality, service and price are acceptable ?

Yes ————— 84%  
No ————— 16%

⑤ In your opinion, is reciprocity buying consistent with effective competition ?

Yes ————— 31%  
No ————— 69%

⑥ In your opinion, do the advantages of reciprocity outweigh its disadvantages in the building of good vendor relations ?

Yes ————— 31%  
No ————— 69%

⑦ In the over-all purchasing-marketing picture, do you believe that a policy of reciprocity buying results in a net sales volume and profit advantage ?

Yes ————— 25%  
No ————— 75%

⑧ If additional costs are incurred through reciprocal buying, is it your company's policy to charge these extra costs to sales or promotional departments ?

Yes ————— 31%  
No ————— 69%

## WHAT THEY SAY

"Our reciprocal buying decisions are based on competitive bidding."

"In all cases, our first consideration is quality, service and prices—all things being equal, we favor a reciprocal purchase."

"I believe that the type of product that you manufacture may have considerable bearing on the reciprocal pressure applied."

"Reciprocity would, and does, limit the potential field of supply to the detriment of the quality and price of the end product."

"I believe a product or a service must stand on its own legs."

"I never like to hear a supplier's sales representative use reciprocity as a sales tool... it puts me on the defensive and builds up my sales resistance."

"Reciprocity is a sensible deal when on a high level where the P.A. is not subjected to pressure."

"In general, I believe that reciprocity is an insidious practice that can develop into very uneconomic practices."

"I do not believe in reciprocity buying, yet believe it courteous to place some of needs in customers' hands."

"Reciprocity must be on a strictly competitive basis or 'no sale'."

"Reciprocity is here to stay."

"Sound reciprocity is predicated on equality of other factors and the philosophy of not biting the hand that feeds you; if it is not advantageous profit-wise, it should never be condoned."

"A general rule is difficult to formulate. Each case, apparently, must be decided on its own merits."

"We like to do business with our customers when we don't have to."

"Sound purchasing calls for confidence in a source of supply. Reciprocity must be based on *mutual* confidence and the ability of both parties to supply price, quality and service."

"Reciprocity has advantages that may be realized by large companies who can spread their volume of purchases over the field. It should only be a factor when quality, price and service are equal."

# THE BUYERS' MARKET

## ... a test of professional stature

By H. Randall Smart, Jr.

THE long awaited buyers' market is with us. During the days of short supply, we have all heard purchasing agents express that thought that with the return of the buyers' market the purchasing agent would come into his own. It is certainly gratifying to be able to place orders where and in the quantities we wish, rather than accept allotments and be regulated by quotas and government restrictions.

But the buyers' market will also be a test of our capabilities.

The purchasing profession has enjoyed a great advance in stature during the past few years. A lot of work and effort on the part of purchasing people has contributed to this advance, but the conditions under which we have been working are also responsible, in part. During periods of short supply, the purchasing agent who could get the material when required has proved his merit. With price controls, that in many cases proved to be floors as well as ceilings, many buyers have had their scope of operations seriously handicapped. Other controls, and market conditions, have also circumscribed their course of action. Nevertheless, purchasing has developed policies and techniques equal to the occasion, and has proved its importance as a constructive factor in the business organization.

Those who have been working long and diligently for the advancement of purchasing have been rewarded by the place at management's table that purchasing now enjoys. They have also enjoyed the

H. Randall ("Randy") Smart, Jr., is Purchasing Agent of the Standard Nut and Bolt Company, Valley Falls, R. I. He is currently serving as Vice President of the National Association of Purchasing Agents for District 9, the New England States area.

He is a native of Saylesville, R. I., and acquired his education at Worcester Polytechnic Institute and Bryant College. Thus he has both a technical and business administration background, highly appropriate for purchasing work.

He went to work for Standard Nut and Bolt Company upon completion of his college work in 1936, was appointed Purchasing Agent three years later, and became a director of the company in 1946.

Upon his entry into purchasing work in 1939, he joined the Rhode Island Purchasing Agents Association, and took an active part in its affairs, serving on a number of important committees and as President and National Director of the local group prior to his election to national office last year.

Mr. Smart gives generously of his time to civic causes, serving on the Municipal Planning Board, Community Chest, and local Boy Scout organization; he is also a member of the Masonic fraternity. The Smarts have a daughter Janice, 8, and a son Jeffrey, 5. Randy finds his recreation at the bridge table and on the golf course.



monetary advantages that go with this increased stature. At the same time, those who worked little or not at all for the common good have also benefitted by this progress and have shared, at least to some extent, the monetary rewards.

In today's markets, there is increased opportunity for good purchasing performance. There is also the possibility that, rather than purchasing coming into its own, we may lose ground that has been gained. We may find that, instead of a seat at management's table, we're sitting at the second serving.

Specifically, because we are now in the driver's seat is no reason for forgetting that we should still "do unto others' salesmen as we would have others do unto our salesmen". This can range all the way from

keeping salesmen waiting unnecessarily to outright sharp and dishonest practices.

In a small company, operations are more compact and the problems of the sales department are sooner apparent. Some of the complaints concerning purchasing agents are: the additional time required to make calls and see the buyer; merchandise returned without permission; cash discounts taken beyond terms; and statements about competitors' prices that are, if not actually untruthful, at least misleading.

It is our job in purchasing to assure our company goods of the highest quality at the lowest ultimate cost. If part of this cost is to be our personal integrity and the integrity of our company, we cer-

(Please turn to page 340)

# EASIER USE OF A COST INDEX

By Louis J. Murphy, M.E.

**C**OST indices, such as those published by the Government, economic services, associations, consulting engineers, and other specialists in the business statistical field, are excellent tools for purchasing agents. They permit rapid cost estimates of many types and, when used with good judgment, give results of surprising accuracy. Using an index will not give you an estimate accurate to the last penny, but you can expect to get a result within a few dollars, which is close enough for many purposes.

The usual type of cost index reports current prices in relation to those in effect at a stated base period. If you are interested only in trends, the index provides a direct reading. But if you are concerned with actual figures, it is necessary to know the base price and then a process of decimal multiplication is involved. The chart presented herewith speeds your work when making any estimate involving a cost index, when the base price is known.

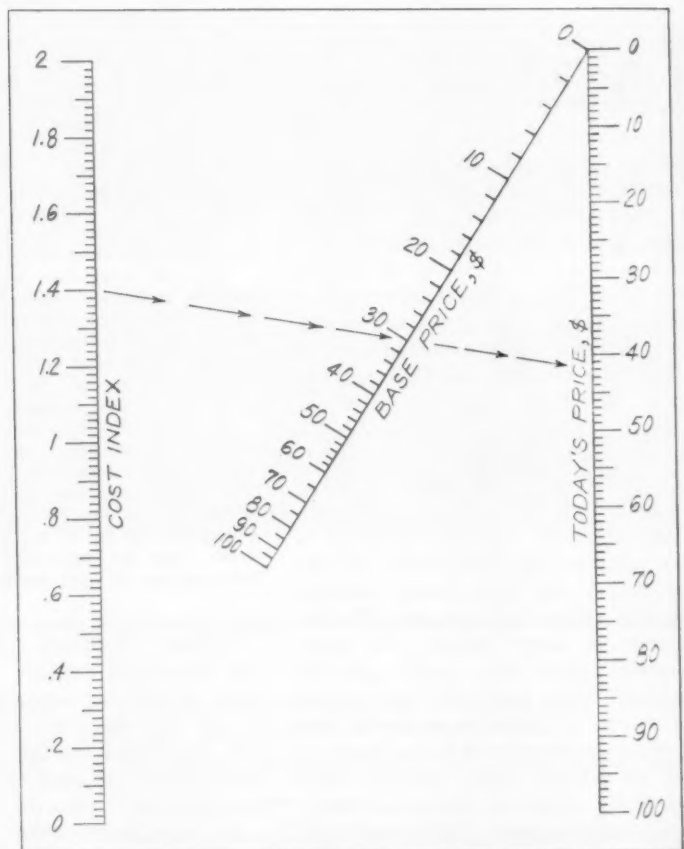
**Example:** What is today's price for steel studs, if the known base price as of June 1949 was \$30 per 100 and the present cost index is 140.

**Solution:** A cost index of 140 means that today's price is 1.4 times the base price as of a certain date, which is always taken as 100. Enter the chart at 1.4 on the left and draw a straight line through 30 on the

central sloping scale. Read today's price where this line intersects the right hand scale—\$42.

This chart has been set up for the complete usual range of index costs, 0 to 200, and in units of \$100. If the base price is greater than \$100, simply add a zero to the appropriate figure on the central scale and in the answer on the right hand or

present price scale. For instance, if the base price were \$300 instead of \$30, solve as described, adding a zero to the number 30 and to the answer; today's price would then be \$420, instead of \$42. If base price is \$1000 or more, add two zeros to the appropriate number. If the base price is in cents instead of dollars, the answer will also be in cents.



1953 production of Plymouth cars—661,318 units—was the largest in its 25-year history. These cars are sold in a highly competitive market, and purchasing has been placed on a similarly competitive basis.



## They Learned to Say "No!"

Buyers' resistance to rising prices is traditional. As a passive policy it is usually ineffective. This article tells how it was given strength and vitality as an organized "resistance movement" based on three sound business and economic factors:

1. A revival of the almost lost art of negotiation in purchasing.
2. A realistic recognition of the new era of competition.
3. The premise that cost savings on the part of suppliers should be shared with the customer.

The results, here reported, speak for themselves. Many Chrysler suppliers are offering voluntary price reductions today.

*... How Chrysler Purchasing met a barrage of requests for price increases with a counter offensive—and won*

*By Dwight G. Baird*

**W**E GOT UP off our knees and learned to say No."

Joseph Pfeiffer, Chrysler Corporation's Director of Purchases, was talking about the transition from a sellers' market to a buyers' market—from a period of Government controls to one of free enterprise—which the country is now experiencing.

"For the first time in many years we are getting back into healthy competitive conditions," he said. "Now the American business man must re-learn how to manage his own business. He no longer has a host of Governmental agencies telling him what he can do and what

he can't do, how much he can have and what prices he must pay, what prices he can charge and what costs he can deduct. Customers are beginning to reassert themselves. They no longer have to beg for merchandise. Competition has returned. Instead of filing an application for one make of product and waiting a long while to get it, they now can look about, compare prices, compare different brands, compare terms, ask for concessions, look for improvements, and place their order where they will get the greatest value for their money.

"The period of wasteful practices and constantly mounting costs has

passed. The American businessman no longer accepts higher costs as inevitable and irresistible and shrugs off demands for increases with the thought that he can add them on to his selling prices. He must manage his own business in competition with many others who are improving their products and selling them for less. If he hasn't already done so, he is going to be forced to take a close look at his business and to find ways and means of eliminating waste, improving his manufacturing methods, and giving better service in order to get business.

### **Trend Seen Coming**

"We anticipated this change early last year. Then we realized that any buyer who has been with us less than fifteen years has never had any experience in a competitive market. He has been accustomed to beg for materials and supplies and to think himself fortunate if suppliers agree to fill his needs on their own terms. He has been accustomed to procure parts wherever he could get them and to ship raw steel for conversion all over the country, involving a high cost penalty. He has been accustomed to demands for price increases and resistance was of little avail if he had to have the materials. In many cases, he has been accustomed to buy from a limited number of sources and because of material allocations he was limited in calling in other potential suppliers to get acquainted with them, give them an opportunity to tell their story, get their bids, and consider the services which they might render.

"We also anticipated that when Government controls expired, we would be subjected to a barrage of requests for price increases. We would be told that costs had increased, that suppliers had been denied commensurate price increases under Government control, that the cost of living had gone up, they had been forced to raise wages, grant fringe benefits, and so on. They just had to have price increases.

### **Positive Resistance Needed**

"But we also knew that this trend must be stopped, and that the way to stop it was to take positive action. We anticipated keener competition. We didn't expect to be able or willing to increase our prices, and we couldn't afford to increase the prices which we pay except in perhaps some special situations. We



Joseph Pfeiffer  
Director of Purchases  
Chrysler Corporation

His buyers are not authorized to grant any price increases under present conditions. If their own negotiation fails, or if they are unsuccessful in finding competitive sources, the case is referred to top purchasing authority.

were going to have to learn to say "No," to ask "Why," and to develop competition and study markets and economics and costs and prices. And suppliers were going to have to think in similar terms.

"To meet these conditions, we prepared a program of specific activities and procedures. We told our buyers to resist all requests for price increases and to demand reductions. Further, that no price increases were to be granted unless approved by top purchasing executives. We increased the number of supervisors to make them more accessible to buyers for advice and guidance. We conducted a series of meetings of supervisors and another of buyers.

"We made up a book for each buyer, listing the parts he buys, the vendors, the percentage of these parts each vendor supplies to each of the Divisions of the Corporation, the prices we pay, and providing space for remarks. We gave these books to the buyers, told them to undertake to make improvements, and to report results as fast as they obtained them. From these reports, we prepared periodical summaries and reviewed them with the buyers.

"It took some time to do all this, but the program began to produce

results along about the middle of 1953 and it has continued to do so. We have granted very few price increases, we have negotiated many price decreases, and the savings total a large amount."

### **Indoctrinating the Buyers**

Meetings of supervisors were held twice a month to give them the thinking of top management which they were to inculcate in the buyers. Buyers' meetings were held monthly. Both were conducted by E. Lloyd, General Purchasing Agent, with Pfeiffer joining frequently to lend his support and sanction.

The primary aim of the meetings, Lloyd said, was to review the conditions and outlook, to acquaint the buyers with the new program, and to teach them, especially the younger ones, to think of themselves as buyers instead of order writers, and as individuals who have responsibility and authority. They were told to look about and invite potential suppliers to call and talk things over; to get bids from numerous sources; to adopt a competitive attitude; to learn to say "No" when asked for price increases, and to take the offensive and ask for price decreases when justified in doing so. No letters asking for price decreases were sent to suppliers. Instead, suppliers and potential suppliers were called and invited to come in for a conference. Each case was considered on its merits, and action was taken accordingly.

Meanwhile, all suppliers who still insisted on price increases that could not be finalized at the buyer or supervisory level were referred to Pfeiffer or Lloyd. We discussed with them the transition which was taking place and asked them to go back and take a closer look at their costs. If they insisted that their costs had increased in certain respects, they were informed that we also had increased costs in our operations but had reduced our prices. In some cases, numerous sessions with individual suppliers were held, bids were obtained from other sources, and the suppliers were informed when they were not competitive. Adjusted prices resulted in some cases where it was found necessary or desirable to change suppliers.

### **An Organized Program**

The program developed logically, step by step;

1. Resistance to price increases. Buyers and supervisors were

not authorized to grant price increases.

2. Buyers were furnished lists of their vendors, the parts they supplied, prices, etc., and were told to review each contract and report results.
3. Supervisors and buyers held frequent meetings to discuss progress.
4. Buyers called in vendors and potential vendors.
5. Buyers took the offensive and began asking price reductions instead of accepting requests for price increases.
6. Having obtained price reductions, they sought to obtain further economies by increased volume to the low cost producer by taking business away from vendors who for some reason were no longer competitive.
7. Records of progress were maintained and from these, summaries were prepared.

### Progress Reports

As fast as buyers negotiated with vendors, they made reports to a central statistical office, using forms prepared for the purpose. They were required to report developments in their negotiations with each vendor. There was a daily report of vendor price increase or decrease requests pending, and a weekly report of vendors contacted for price de-

creases, both by buyers. From these, a bi-weekly summary of price decreases by buyers was tabulated, together with total number to-date, total of old and new per piece price, and the amount and percent of price changes. Finally, when the program had been in effect for several months, a price decrease report to show by buyers and by vehicles

total savings effected since August 15, 1953 was prepared.

The figures listed in the accompanying specimen reports are fictitious, but they are indicative of actual results obtained. While such information was compiled primarily for top management, the effect on the individual buyers may easily be imagined. They realized



Millions of parts are purchased for automotive production. The price you will pay for your next car depends on keeping the cost of these parts in line.

**PURCHASED PARTS**  
**MORE THAN ONE SOURCE PROVIDING A SPECIFIC ITEM**

PRINTED IN U.S.A.

BUYER \_\_\_\_\_

PART NO.	PART NAME	VENDOR	PERCENT OF BUSINESS										F.O.B. D.P.-CITY	PRICE	REMARKS	
			PLYMOUTH	DODGE	DE SOTO	CHRYSLER	TRUCK	OTHER PLANTS		PLANT		PER CENT				
* 1574384-5	Class Run	Standard Prod.			100%									O.F.	.43	88.
		General Tire				100%								O.F.	.43	88.

\* Indicate Percent of Business  
Place Vendor's Name in  
"Part Name" Column

**DAILY REPORT**  
**VENDOR PRICE INCREASE OR DECREASE REQUESTS**  
**Pending in Purchasing Dept.**

Buyer  
Name \_\_\_\_\_

Part Number	Part Name	Current Price	New Price	Amount of Change	Plymouth No. %	Dodge No. %	De Soto No. %	Chrysler No. %	Usage Per T-334 Dodge Truck No. %
0046576	The ABC Co. Battery Hold Down Stud	22.80	21.00	1.80	10 30	12 35	16 35	16 35	
0046576	John Doe & Sons Co. Carburetor	19.50	17.20	2.30			1 70		
	H.C. Grant Co.	20.00					1 70		
0072165	Tam Henry & Co. Oil Filters	6							
0076142	Industrial Mfg Co. Air Cleaner								
0076543	The White Co. Radiator Cores								

**WEEKLY REPORT OF**  
**VENDORS CONTACTED FOR PRICE DECREASES**

Buyer \_\_\_\_\_  
Date \_\_\_\_\_

VENDORS NAME	Price Decrease Received	Negotiations Ended - Decrease not Rec.	Price Decrease Pending
The ABC Co.	x		
John Doe & Sons		x	
H.C. Grant Co.	x		
Tam Henry & Co.			x
A.B. Smith Co.		x	
The White Co.			x

The price resistance policy is kept in the forefront of every buyer's thinking by a permanent record on each purchased part and daily and

weekly reports of cost negotiations completed and pending. Evidence of results encourages continued effort.

then, if they had not done so before, that they were important, that they were being held responsible for results, and that their individual performance was being compared with results obtained by their colleagues.

Some began taking the offensive early and met with considerable resistance. But they kept on trying. Then others began to catch the spirit and to adopt a different attitude. By July, the entire department was wide awake and was attacking the problem in earnest.

### Typical Case Histories

One vendor who had been supplying a fairly expensive part for years came in early and asked a 10% increase. He met with resistance because his operating statement showed that he was doing quite well and he did not have sufficient justification for an increase. He was rather aggressive in his demand, so Chrysler began making inquiries elsewhere. Told that this was being done, he reduced his re-

quest to 5% and insisted that he wouldn't ship unless he got this increase. When this demand was met with the fact that the part could be procured for less elsewhere, he decided that he could get along without any increase. However, Chrysler had learned that they could get the part elsewhere for 5% less than they had been paying him. Even though the vendor offered to meet competition, it was decided to place the business elsewhere.

In another case, Chrysler was paying one vendor \$10 per thousand, and another, \$9.95, for one part. Both were shipping to four destinations. They were first asked to consider their costs with a view to reducing their prices, then they were asked if they could make further reductions if they shipped only to one destination. Now each ships to only one Division and each is supplying this part for around \$8.00.

Another vendor was getting \$48.25 per thousand for one part and asked for an increase to \$50.40. Again, in-

quiry revealed that this part could be procured from another source for less. The vendor found ways and means of reducing his costs, and he is now supplying this part for \$44.

One vendor had been getting \$46 per hundred for one part while another had been getting \$47.255 for the same part. The first vendor asked for an increase to \$52.43 and the second said he would have to have \$53.30. When the higher-price vendor insisted that he couldn't continue to ship without an increase, the other vendor agreed to forego an increase in consideration of all of the business.

In another case, one vendor was getting \$16.20 per hundred and asked for an increase to \$20.20, while another vendor was supplying the same part for \$15.60 and would be content with a smaller increase. Both eventually agreed to supply this part at a price under \$14.50. A spot check of the market revealed that this was a fair price for the part.

One of these same vendors was supplying one part for \$17.06 per hundred and asked for an increase to \$17.70. Reminded that this part also was procured from another vendor for less than \$17.00, the vendor who had asked for a price increase decided that he could be as low priced as his competitor and reduced his price under \$17.00 to retain the business.

### Working With Vendors

It should not be inferred from these examples that Chrysler is asking vendors to forego reasonable profits. It is asking them to study their costs, survey their plants, eliminate wasteful practices which have become all too prevalent during boom times, and to meet wholesome competition, just as Chrysler itself is doing. In many cases, several vendors have been supplying the same parts to all or several Chrysler Divisions; perhaps if one vendor were given an order to furnish all of a given part to one Division, this would reduce his costs and give him larger volume. This would also

reduce Chrysler's costs as it would get the part for less, would have less paper work, etc. Chrysler would still be protected on sources because other vendors would be supplying the same part to other Chrysler Divisions and could be called upon in an emergency.

For example, two vendors who supplied a piece of equipment were asked to reduce their prices. One insisted that he couldn't do so, while the other agreed that if given all of the business, he could install some new, automatic equipment and reduce his price. This was agreed and he reduced the price of this item about 30 cents.

Vendors are not asked to say yes or no without taking time to study the subject and see what they can afford to do. For example, in March one vendor said positively no; in August he asked for further time to study the matter; and in November he reduced his price about 8%.

### Results Confirm Policy

As more and more vendors came to realize that the boom was over,

that business was getting back to normal competitive conditions, and that they were going to have to sell, instead of permitting customers to buy, their resistance to price decreases weakened. Now many of them are coming in and submitting voluntary price reductions.

Most of the Chrysler vendors supply numerous parts; some of them are high on some parts, low on others. In these cases, if they are unable or unwilling to reduce prices on items on which they are high, the business is given to others who are low. And *vice versa*, a vendor who loses some business because he is high on some parts gets other business on parts on which his price is lower than competition.

By the end of 1953, Chrysler Purchasing had completed negotiations with more than 500 vendors who had either reduced prices or else had agreed to forego any increase.

And all this Messrs. Pfeiffer and his associates are convinced is a good example for the entire American economy.

Prices going up—or down? The figures are fictitious but they reflect an actual situation. Cost savings per piece and per vehicle are

modest, but highly significant when multiplied by thousands of units of production. More important: they have reversed a trend.

PRICE DECREASE RECORD FOR TWO WEEK PERIOD ENDING JANUARY 8 1954									
BUYERS NAME	DECREASES Since Last Report		VENDORS Since Last Report		TOTAL OF PER PIECE PRICE		PRICE CHANGE		
		Totals		Totals	Old	New	AMOUNT	PERCENT	
B. C. Andrews	1	24	1	90	15.1543	11.5520	1.2345	8.0	
H. W. Brown	5	4	7	272	1.6090	12.5555	2.4653	10.5	
J. C. Cronin	10	3	-	2	88.8989	1.3636	10.1010	9.1	
J. W. Dwyer	111	2							
S. H. Edwards	12	34							
L. A. Franks	-	77							
B. W. Gillis	-	48							
Totals	139	192							
* Indicates a Cumulative Total per Buyer ** Number of Vendors per Buyer who have g *** Indicates a Net Total eliminating dupl to more than one Buyer									

PRICE DECREASE REPORT TOTAL SAVING PER VEHICLE - SINCE AUGUST 15, 1953						
BUYERS NAME	CAR A	CAR B	CAR C	CAR D	TRUCK A	
B. C. Andrews	.4950	.0987	.5869	.3990	.2246	
H. W. Brown	.8305	.9870	.5540	.3876	.0298	
J. C. Cronin	.9987	.9376	.4659	.1132	.1515	
J. W. Dwyer	.3036	.3322	.5264	.1367	.1333	
S. H. Edwards	.1313	.5151	.5532	.5555	.1212	
L. A. Franks	.3939	.5050	.5555	.6987	.3209	
B. W. Gillis	.4848	.3633	.5050	.6262	.2124	
Totals	3.6378	3.7390	3.7468	2.9169	1.2237	
Note: This report is based on reductions in cost of parts applicable to 4-Door Cars with Standard transmissions and a half ton truck with standard transmission.						
J. B. Doe - 88 January 21, 1954						

## Purchases "For Sale or Return"

By Albert Woodruff Gray

**A**N order for 30,000 tons of paving stone was given a stone dealer at Detroit, Michigan, by the Works Progress Administration of the Federal Government. The specifications called for stone of an unusual size, rather than the standard size such as usually carried by quarries, with the provision that the amount of this order could be increased or decreased by the government by 25% of the named quantity.

The dealer arranged for the supply of this stone from a quarry company at 90 cents a ton. He leased land with a 625 foot frontage on the Rouge River to provide storage facilities for the stone. The first delivery of 9,689 tons was made on this lot.

Shortly after the delivery of the first cargo, the dealer, in confirmation of a telephone conversation with the quarry company wrote, "Relative to our telephone conversation about placing second cargo of stone on my dock, to apply to WPA order 51-34182, this material to be billed as of date when 75% of present cargo has been removed. I further agree that none of this material will be used to fill any other than above mentioned order."

Following this, a second cargo of 8,791 tons was delivered at the same storage lot, followed shortly after by a letter from the dealer in reference to a third shipment, "This is to authorize the placing of third cargo of 4" stone on my dock in Detroit. Billing to be made as of when 75% of 2nd cargo has been used by WPA. It is agreed by me that none of this stone will be used to fill any orders other than WPA 51-34182."

Within twelve hours after this

third shipment had been unloaded on this lot from the boat, the river bank sheered off, carrying 3,180 tons of this stone to the bottom of the river.

### **Custodian or Owner?**

Later this quarry company sued to recover for the stone which had been delivered. The dealer asserted in his defense that he did not own the second and third shipments but that the stone in those cargoes had merely been entrusted to him as a custodian. The quarry company on the other hand maintained that these cargoes had been sold with the privilege of return and that the dealer, having failed to exercise this option to return these shipments, thereby became liable for the price agreed upon.

The Uniform Sales Act that has been enacted as a statute in Michigan, is, "When goods are delivered to the buyer 'on sale or return' or on terms indicating an intention to make a present sale but to give the buyer an option to return the goods instead of paying the price, the property passes to the buyer on delivery but he may revest the property in the seller by returning or tendering the goods within the time fixed in the contract or, if no time has been fixed, within a reasonable time."

### **Privilege of Return**

Basing its decision of the case in favor of the quarry company on that statute, the Supreme Court of the state said:

"There are marked distinctions between a sale with the privilege of return on the one hand and a conditional sale or bailment on the other. In a conditional sale, pay-

ment of the purchase price is a condition precedent for passage of legal title, while in a sale with the privilege of return title passes on delivery, but the buyer has the privilege of revesting it in the seller by returning the goods. In a sale with the privilege of return the buyer has the right to return the goods rather than pay for them; in a conditional sale such act would constitute a breach of contract."

With reference to the circumstances of this particular incident, the court continued, "Had the WPA used less than the prescribed percentage of the preceding cargo or cargoes, the dealer would not only have had the privilege but it would have been his duty to return the shipment for shipments unused."

"In a sale with the privilege of return, the decision whether to exercise the privilege rests with the buyer, not the seller; in bailments, that decision rests entirely with the bailor, not the bailee, though the bailee may demand that the bailor take back his property."

### **Pay for What Is Used**

A more usual situation involving this rule of law occurred in Alabama in relation to a bridge painting contract. Under this agreement, if more paint was needed the contractor could obtain it at an agreed price, and if he did not use the entire amount delivered, the unused paint could be returned and credited. 1,605 gallons of paint were delivered.

The paint company sued for the price of the entire 1,605 gallons, although but a quarter of that amount had been used and the remaining 1,205 gallons had been tendered to the seller for credit. In holding the

contractor liable under this contract only for the amount of paint actually used, the Alabama court said:

"This character of order constituted what is termed a sale or return agreement, with the right to return the amount unused."

#### **U. S. Decision Governs**

A few authorities, principally English, hold that under contracts of this character which permit the purchaser to return the goods after delivery, the title does not vest in the purchaser nor does he become the owner until his determination to accept the goods has been expressed or until the specified time within which he may return the goods or a reasonable time for so doing has passed. However, a decision of the Supreme Court of the United States on an appeal from a judgment by an

be the consideration for an option on all of said property until \* \*, at which date the above named parties are to pay J.T.N. an additional sum of \$4,500 or, in lieu thereof, to turn back to said J.T.N. all the property delivered by him."

When this stock was not returned within the specified time, suit was brought for the recovery of the additional \$4,500 payable under the agreement. The defense was that the contract represented merely an option and that no liability rested on the parties to this agreement for the further payment of \$4,500.

#### **Option Is Defined**

In its decision holding the purchasers of the stock liable for payment of the \$4,500 the Supreme Court said:

"While an option is given by the

"Here is an absolute promise to pay an additional sum of \$4,500 at a specified date or, in lieu thereof, to turn back the property. They did not return the property. The amount to be paid and the time of the payment are expressly named, and that stipulation in the contract is as significant and binding as any other. It shows that the option given is an option to return, and if it is not exercised at the time named the sale is complete and the promise to pay the balance of the purchase price becomes absolute."

#### **Creditors and Consignments**

In Arizona twenty years later occurred a controversy that, by contrast with this Supreme Court case, highlights the distinction between transactions of that character and ordinary consignments. A creditor levied on a lot of automobile tires in the store of a retailer, and suit for the recovery of the possession of the tires was immediately brought by a manufacturer, alleging that these tires were delivered to the retailer on consignment and were the property, not of the retailer but of the manufacturer.

The creditor of the retailer who had levied on these tires contended that the transaction was one of sale and return and that title to the tires was in the retailer, since they had not been returned to the manufacturer.

In its decision that the tires were held on consignment and remained the property of the manufacturer, the Arizona court, following the rule laid down by this Supreme Court decision, said:

"A contract of sale or return is a contract by which property is sold but liable to be returned to the seller at the option of the buyer. In this class of cases the transaction vests title immediately in the buyer who has the privilege of rescinding the sale and, until this is exercised, the title remains in him.

"In such cases the property in the goods passes to the buyer. The price is fixed at the time of the sale and delivery, the buyer deals with the goods as his own, disposes of them as he pleases, by cash or credit, is under no obligation to give any account of his disposition of them, and is only liable to pay for them at the price fixed beforehand without any reference to the price at which he sells them."

The court then contrasted this type of contract with an ordinary sale on consignment. "On the other

(Please turn to page 318)

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### **REFERENCES**

Uniform Sales Act, Sec. 19, Rule 3.

Thunder Bay Quarries Co., 3 N.W.2d 316, Michigan.

Magic Paint & Varnish Co., 152 So. 42 Alabama.

Guss v. Nelson, 200 U.S. 298.

Rio Grande Oil Co., 250 Pac. 564, Arizona.

Sturm v. Boker, 150 U.S. 312, 328.

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Oklahoma court represents the generally accepted rule in this country, that has now been embodied in the Uniform Sales Act.

This Oklahoma incident involving a contract for the purchase of stock was in part, as follows:

"J.T.N. agrees on his part to turn over 25% of the capital stock of the following coal companies \* \*. The consideration for the delivery of the above listed stock is a payment of \$500 in cash upon delivery of the above named property, the \$500 to

contract and the price paid for the option is named, yet it contains other clauses which are equally binding and from which liability arises. Option contracts are not all alike. As said by the Massachusetts Court, 'An option to purchase if he elected, is essentially different from an option to return and purchase if he should not elect. In one case the title will not pass until the option is determined; in the other the property passes at once subject to the right to rescind and return.'

## Purchasing's Part in Product Development

Purchasing Agent in conference with Ronny Miller and Doug Hobes, of Engineering. Close and constant liaison between the two departments has helped solve many knotty problems of design, specification, and procurement.



● By Paul V. Farrell

**A** GOOD measure of purchasing's efficiency and standing is the part it plays when the company launches a major product change. The buying role can be a passive one, limited only to filling requisitions and ending when the needed materials reach the production line. Or it can be a dynamic one, involving close cooperation with all company departments from design stages until the product hits the market.

When the Ritter Company, Rochester, N. Y., began development on a complex, high-priced and highly competitive new product, its purchasing department was ready to play an active part in the project. Already recognized by management as a vital part of the company team, the department was flexible enough to adapt itself quickly to the new problems created by the advance design. As a result, it made notable contributions to what is now a very successful new product.

Ritter makes a wide line of dental and medical equipment. It is known best to the public, perhaps, by the familiar "all-in-one" unit seen in many dentists' offices. Its new product is a modern, streamlined version of the unit, called the Instru-Matic. Ritter says it is the first major change in dentistry equipment since 1937. The company adheres to unusually high quality standards, right down to the minutest detail. All purchased products are subject to severe inspection and testing, which puts an added responsibility on purchasing.

There is a lot more to making and marketing the new unit than meets the patient's eye. In the hard work that went into translating an idea into a "glamor" product, purchasing's effort was divided roughly into these three phases:

1. Adjusting its buying habits to develop good new suppliers for the different materials and components needed for the new design.

2. Expanding its working force and adapting its regular forms and methods to meet the procurement problems raised.

3. Doing a public relations job with Ritter suppliers during the development stages and later when the new unit was to be presented for the first time.

### Cooperation Both Ways

Company policy, plus the personal philosophy of Purchasing Agent William F. Sauers, did much to make the job go smoothly.

Ritter, which produced its first dental chair in 1887, is a traditional organization with a record of progressive thinking. Management wants, and gets, an atmosphere of cooperation and mutual respect between Ritter employees and the people with whom they do business, and between people and departments within the company. Mr. Sauers' personal reaction to this policy is reflected in many ways.

Perhaps as indicative as any is his almost casual remark, "We have no secrets. This used to be a closed office. We knocked the walls down early (after taking over the P.A.'s job) to keep in touch with the rest of the company and the people in our own department."

For really sound buyer-seller relationships, both sides must have a good knowledge not only of their own manufacturing requirements and problems, but of the other fellow's. At Ritter Company, a close and mutually helpful liaison is maintained as a new product moves toward realization—from experimental engineering, to engineering and tool engineering, then to production.

Two members of the engineering department—Rona'd Miller and

Douglas Nobes—spend a considerable part of their time in the purchasing department, working with Mr. Sauers, his buyers, and many times with suppliers. Thus, both purchasing and engineering are constantly and fully informed of each other's work. And they are prepared to assist immediately in the solution of each other's problems. "Our over-all problem," Mr. Sauers says, "is to build the company. There's no question of conflict between departments. It's the other way around. And we can't begin to measure the many thousands of dollar savings that have resulted from this purchasing-engineering liaison."

Another aid in keeping all groups abreast of developments is the weekly production meeting, held

every Tuesday morning. There the plant superintendent, factory manager, purchasing agent, production manager, master mechanic, chief engineer, time study chief, and laboratory chief meet to discuss and report on progress in their respective fields. A record of the meeting is kept for quick reference.

### Geared for Service

With this kind of internal background, purchasing was in a good position to work closely with vendors in getting the proper materials needed for the new unit. In several cases, purchasing, engineering, and production, working together, were able to change specifications on some items to help suppliers with their production problems. The strong thread of cooperation that runs through the Ritter organization on out to vendors proved invaluable in such situations.

Some of the major buying changes resulted from a switch from aluminum sand castings—produced in Ritter's own foundry—to large steel panel stampings and aluminum die castings. Replacement of many machined parts and small forgings by precision castings also called for changes. The new unit uses, for example, 16 die castings, where the old unit used only one.

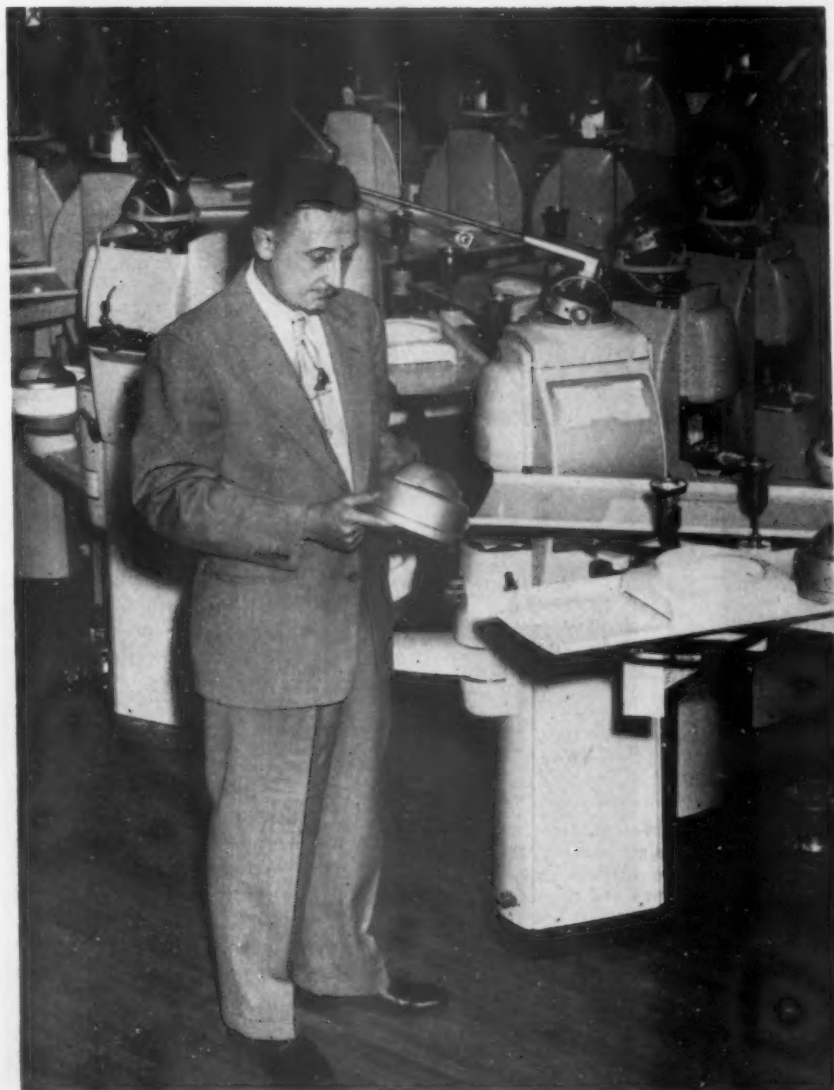
Typical of Ritter insistence on quality—and the need for new sources it often creates—is the notching in a ferrule, designed to aid the dentist's efficiency when he is pulling out tubing. Only a precision cast ferrule could provide the notch Ritter engineers wanted—so purchasing went out and located a supplier for the part. "It's only a small item," according to Mr. Sauers, "but it's indicative of the pains we'll take to insure quality in our products."

Development of the new product, plus the addition of various types of medical equipment to the Ritter line, caused an expansion in the purchasing department organization. Two new buyers were added, and the expediting staff increased from one to three. Another clerk was put on purchase record work, and additional stenographic help was added.

### Constant Check on Prices

No new purchasing forms or procedures were developed specifically for production in the Instru-Matic. But certain techniques Mr. Sauers had introduced into the department since becoming Purchasing Agent were effectively operating and fitted

P. A. "Bill" Sauers believes in getting out into the plant to see how the things he buys are used. In this photo he is shown looking over the first lot of the new Instru-Matic units on the shipping floor.





Mr. Sauers, at desk in far corner, knocked out the walls of his private office to stay in closer contact with his expanded purchasing force.

in nicely with the widened buying program for the new unit.

One of these is the Request for Quotation. Prior to its use, purchasing had followed the practice of sending out letters to four vendors, asking them to quote on an item. The lowest bidder, who got the original order, was then reasonably sure of getting all the rest of the orders. This tended to hamper the

development of sources, and costs on many products continued to build up, without any action being taken.

To broaden the base of quotations and provide a means of reviewing costs, Mr. Sauers set up a multiple form which can be addressed to four suppliers at one typing. Snap-out carbons are so arranged that all information on each of the request forms appears on one master "quo-

tation recapitulation." This sheet is kept in the purchasing office, and all data returned by interested suppliers are entered on it—including shipping date, f.o.b. terms, cash discount and price. Thus, a complete comparison of terms of four suppliers is quickly accessible from a single sheet.

Once the form had been adopted, Mr. Sauers and his staff set about testing it on a group of items taken at random from among the 20,000 or more bought by the company. Within 6 months, going through the selected items just once, the group was able to show a definite saving of \$10,000 by getting the same quality products from lower bidders than the original suppliers. The project is continuing, and Mr. Sauers expects eventually to review costs of almost all major items through use of this request for quotation form.

A form devised by Mr. Sauers to overcome some of the purchasing headaches brought on by World War II has been giving excellent results since. In the war period, substitutes were almost the rule rather than the exception, and a great amount of confusion was caused in trying to get them approved by all departments concerned.



L. E. Feeley, Assistant P. A., examines some of the precision castings required for the new unit.

This form—called the Substitute Material Request and Approval—is sent to the heads of production, engineering, processing and laboratory, whenever purchasing is able to come up with a possible alternate material. It reads in part:

#### **Substitute Material Approval**

"Please give this notice your immediate attention as the substitute suggested is being held subject to prior sale. Either approve or reject this request, returning same at once to the purchasing department. . . ." Then it goes on to list the original specifications, the suggested substitute, possible sources of substitute materials, and space for comment.

If and when the substitute is approved, a "Substitute Material Purchase" form is made up in eight copies. They are distributed to cost, processing, purchasing, analysis, engineering, inspection, production, and receiving departments. The form reads in part:

"This is to advise you that the substitute material listed below has been approved (verbally) (in writing) by the following departments: (Engineering), (Production), (Processing), (Analysis), (Purchasing)

and the purchase order indicated has been placed." Original specifications and substitute specifications are given, along with the date of purchase, the source, and the purchase order number. Once the substitute specification is OK'd, there is no more paper work. Before material comes in, everyone concerned knows what it is and what to do with it.

This form has already saved many thousands of dollars and improved efficiency. Purchasing has a permanent record of approvals, and suppliers of substitutes, and can quickly order an approved substitute without again having to ask anyone in the shop. Thus arguments over authorization are avoided and there are no delays in getting needed material to the production line on time.

On an often difficult item like furniture steel, for example, there are 40 different acceptable substitutes for .022" x 27" x 100" CR first grade all prime steel, resquared, oil'd and annealed.

"Even in these times of good supply," Mr. Sauers reports, "we continually use these forms, which are now a permanent part of our op-

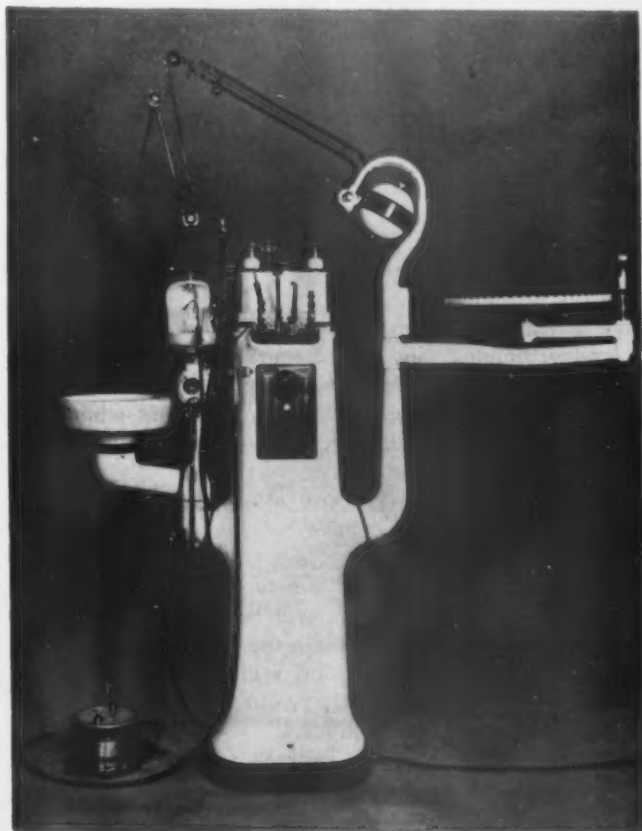
eration. There will always be a time when something is not available in the right quantity or quality. This way we can let a supplier know if a substitute is acceptable while he is still on the 'phone."

George Snyder, buyer of steel and non-ferrous metals, has worked up a form that has been instrumental in broadening Ritter's vendor relationships. At the same time it produced material for a source book on metals warehouse service.

The simple form, mailed to all warehouses which could probably furnish Ritter's requirements, asks for a yes or no answer on the availability of various metals in different forms—sheet, tubing, rod, bar, etc. Each addressee is asked to indicate whether or not he normally ships into the Rochester territory. Included with the letter is a circular, showing some of the products Ritter makes, serving to introduce the company to potential suppliers and giving a general indication of its requirements.

Replies are tabulated on multi-graphed sheets, with tab index, collated in a pressboard binder. The compilation covers Aluminum; Brass; Bronze; Comm.; Bronze,

Before and after. The compact, streamlined unit at right posed more purchasing problems than the familiar, formidable outfit it replaced.



## TYPICAL PURCHASED COMPONENTS



Some of the die castings used. All parts must be held to high standards of quality and precision.



Precision stainless castings, with plastic holder to show their relationship in actual application.



Steel stampings and die castings in finishing department. They replace sand castings formerly made in Ritter's own foundry.

Phos.; Copper; Copper, Beryllium; Duralumin; Inconel; Lead; Magnesium; Monel; Nickel; Nickel Silver; Tin; Zinc; and the following steel classifications: Alloy; Plate; Rod and Bar; Sheet and Strip; Spring; Stainless; Structural; Tool; Tubing; Wire; Drill Rod; Ground Flat Stock. Most of the listings are of warehouses in the eastern territory, but Midwestern, Southern, and Pacific Coast warehouses are also included where they qualify as potential suppliers. Wherever possible, the name of the personal contact at each vendor company is also noted.

This compilation has been extremely useful as a guide to metals

sources. Typical of the broad-gauge policies of Ritter Company, helping both purchasing agents and suppliers, is the fact that copies of this guide developed by Mr. Snyder were distributed to members of the Rochester Purchasing Agents Association.

### Supplier Relations

Once the new Instru-Matic was introduced to the public, the purchasing department's contribution to its development did not end. Ritter expects its suppliers to follow-through in their service, and did a unique bit of follow-through

on its own account. A letter, signed by Mr. Sauers, was sent to every vendor who supplied materials for the new product. It told where the unit was being introduced, and went on:

"As one of the many companies who have worked with us during the past few years in the development of a new Dental Unit, I know that you will be interested in looking through the catalog which is enclosed, and seeing for yourself exactly what your efforts have helped to produce.

"The outlook for the year ahead is that your company and mine have a major job on our hands to meet

Whether it's for a special project like this, or in normal operation, the Ritter purchasing department follows the same rule of cooperation and courtesy within and outside the company. Its personnel will travel great distances to visit and advise suppliers—or across the hall to the engineering department for consultation—with equal willingness, to help or be helped. It has made the department flexible, adaptable, versatile, effective, and very valuable in upholding the company's high standards and reputation.

Substitute materials must have the approval of Engineering, Processing, and Laboratory Departments. These simple forms are the means of speeding approvals and keeping everyone informed, before and at the time of purchase.

The recap of quotations is made on the top sheet of a 9-part form. Snap-out strip carbons permit addressing the quotation request to four different vendors at a single typing, with one copy to be returned and one retained by each vendor.

## From Destruction to Production in Three Hectic Days

An interview with **L. M. Eble, Jr.**, Purchasing Agent, C&D Batteries, Inc., Conshohocken, Pa.



P. A. Lou Eble at his temporary quarters in the gate house. While other departments found space in nearby locations, Purchasing had to stay at the plant site to check on essential requirements and coordinate the flow of emergency equipment and materials.

THE term "emergency order" has a very vivid meaning for this purchasing agent, whose plant was wiped out by fire over a recent week end. But starting from scratch, without benefit of records or even a purchase order form, the job of rehabilitation proceeded so effectively that the company was back in limited production in three days' time, and on a full production schedule within three weeks.

Mr. Eble doesn't recommend even a good memory as a substitute for adequate records, or shorthand notes as a purchase order file. But he is thoroughly sold on the value of good public relations. For his experience proves how the active cooperation of friendly suppliers and community can help out a neighbor in distress.

ON Sunday, November 29, 1953, a fire roared through the block-long plant of C&D Batteries, Inc., Conshohocken, Pa., causing more than \$1,000,000 in damages. For four hours it raged out of control despite the efforts of eight fire companies that answered the general alarm. When it was over, more than 80% of the floor area of C&D was a pile of twisted steel, crumbled brick, and charred timber.

Yet, three days after the fire, C&D was back in limited production. In another seven days completed batteries were being packed and shipped. By Christmas Eve, the company was back in full produc-

tion. It was a remarkable recovery and purchasing was part of the team that put C&D back together again.

While the ruins were still hot and smoking, C&D's board of directors met to set up plans for ascertaining the extent of the damage and to take the necessary steps on the road to recovery. It was found that the grid casting room, machine shop, generator room and shipping department were the only areas that had escaped destruction.

Accordingly, L. A. Doughty, president, took over the job of rigging emergency lines to charge

the batteries that had escaped the fire. F. S. Carlile, vice president and treasurer, J. F. Rittenhouse, executive vice president, and H. E. Jensen, vice president-engineering were detailed to locate temporary production facilities. S. W. Gibb, vice president-sales, was assigned customer relations. Insurance and finance problems went to T. L. Caldwell, secretary. Salvage of batteries and inventory was the task of S. E. Doughty, manager of quality control. To Purchasing Agent L. M. Eble, Jr., went the job of supplying all departments with production material and whatever else they needed to get operating.

"It was quite a task," Lou Eble said. "We had lost a lot of vital equipment. Granted, we could still cast and paste our grids because that area was untouched. But we had lost all our tools for assembling the batteries, our charging equipment, our acid vats, materials handling equipment, some of our production supplies and our office equipment and supplies. Many of our records had been destroyed and those that survived had to be either sorted or copied. It was almost like starting from scratch, except that we had no place to work."

As it was, one other available spot had totally escaped the fire. This was a small, 8'x10', guard house at the main gate to the plant. For awhile, it served as general offices for C&D Batteries. The telephone company rigged up six lines and eight phones with a complex control panel of lights, bells and buzzers for the firm.

"My secretary, Barbara Webster, and I used the guard house along with about 12 or 15 other people. What with the crowd and the panel board lighting up like a Christmas tree whenever a phone rang, the place soon became a bedlam. However, we had managed to contact most of our suppliers, from memory, on Sunday night, to get them to hold delivery of pending orders and to let us know what we had on order with them. Although we were pretty successful in contacting these people, believe me, memory is a poor substitute for good, clear, written records.

"On Monday, Mrs. Webster and I started to get things squared away so that there would be some semblance of order to the many purchases that we would have to make. We met with department heads to see what was needed and then tried to set up a priority system for ordering. But, with the needs so many and so urgent, we had to scrap our ideas and work out each problem as it came along. I guarantee that such a haphazard system will never replace a good sound purchasing procedure."

By this time, the extent of the damage was beginning to be known. New acid tanks were needed. So were pliers, wrenches, torches, typewriters and most of the other things that make up the production end of a company.

"We still didn't know what state our purchasing records were in so we had to work without them," he continued. "The only way we could



On Saturday, a busy factory . . . by Sunday night, a shambles.



About 80% of total plant area was destroyed by the fire.

operate was by verbal orders with the promise of written verification and purchase order numbers. Our suppliers were most helpful in that respect. Most of them, in spite of rigid purchase order requirements, waived these rules to give us a helping hand. We became more and more aware of the importance of good vendor relations as call after call came in with offers to assist us in getting whatever items we needed. In the case of the acid tanks, one of our suppliers traced down some likely sources and phoned us the information for our follow through. Local merchants and business people, too, offered their help. Stationers' stocks were exhausted

and furniture dealers cleaned out their stocks to set us up. The local Dodge-Plymouth dealer even offered to remove his new cars from his showroom and turn over the area to use as C&D general offices.

"All the while," he continued, "the only records we had of orders being placed were the pages in Mrs. Webster's steno book. The few typewriters we had managed to obtain had to be detailed to copying and replacing vital records. Purchasing had to get along with a pencil, a pad, and some Gregg, to keep track of what was happening."

Within a day or two, C&D had located temporary quarters for its

(Please turn to page 322)

# The Economics of Delivery Truck Equipment

- ... First cost is spread over long truck life
- ... Operating and maintenance costs outweigh vehicle cost by a wide margin
- ... Figure payload capacity and truck ratings to avoid overload and decreased life

By Edgar Parker

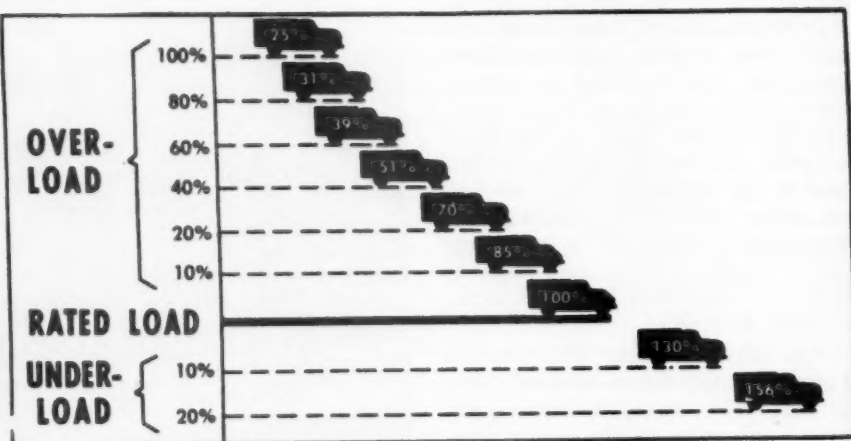
**W**ITH today's narrow profit margins, even in a hey-day of big volume, there's not much margin of safety for profits if volume should fall. Expenses never go down as easily as they go up. That is especially true in businesses in which delivery costs, including routemen's pay, account for a big slice of every dollar taken in.

The economics of truck deliveries, and of delivery equipment, are important not only to the big fleet operators, but to the users of only a few trucks as well. If a truck operator has only five trucks and sends his maintenance work out, he lays up 20% of his equipment each time repairs are necessary. It may cost him more for total maintenance than it costs an operator with enough trucks to warrant having his own mechanics. Avoidable losses of routemen's and mechanics' time are vital to both big and small operators, so intelligent precautions can cut costs for both.

Low route costs and delivery costs depend on intelligent "know how". Even good preventive maintenance cannot make the wrong equipment economical. And poor loading practice is responsible for substantial "hidden" losses in truck and tire life and delivery efficiencies.

Here are some provocative questions that should be considered by every route truck user:

1. How long should today's route



Effect of Overload and Underload on Tire Life

truck last, from the time it leaves the assembly line till it is scrapped or turned in for new equipment—(a) in years? (b) in total miles?

2. What percentage does the first cost of a route truck represent in relation to its lifetime operating and maintenance costs, excluding routeman's pay and commissions?

3. What will it cost, at today's rates, for an average routeman (pay and commissions) during the life of a truck?

4. How many hours of a routeman's time, during the life of his truck, will be spent—(a) in loading? (b) in checking? (c) in driving to and from his route? (d) in actual contact with customers and prospects?

5. If you could save one hour per

day per truck loading, driving, and working the load, how much extra volume could the routeman do in that extra time?

6. The average routeman is said to be 5' 9" tall with his shoes on. If he has to stoop in loading and working the load because of a 4½' or 5' high load-space, how much time will he lose during the life of the truck?

7. On city routes, how much time can be saved in traffic with a short wheel-base unit, during the life of a truck?

8. The floor level of some route trucks is 8" higher from the ground than in others. How much decrease does this make in volume per truck during a truck's life?

9. Some route trucks have a much wider loadspace than others, to permit

easier accessibility to the payload. How many hours does this save during a truck's life?

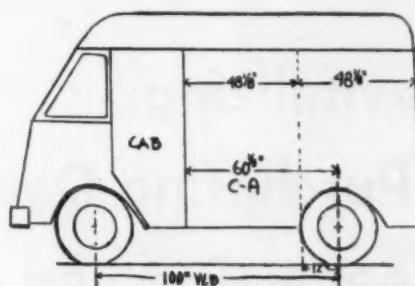
10. In house-to-house deliveries, how many more customers can a route-man serve from a man-high body than from a low body?

11. You are interested in carrying maximum payload. Assuming a 10% overload on standard tires, what is the extra cost for tires during a truck's life? ((See Exhibit A for the effect of overloading and underloading on tire life.)

12. Truck "A" comes equipped with 700x16 6-ply tires as standard. Chassis and empty body weigh 2581 lbs. over front axle and 2789 lbs. over rear axle. Payload distribution percentages are 5% front and 95% rear. How much payload weight, including racks and driver, can you carry without overloading the rear tires, which are rated at 1485 lbs. each? (See Exhibit B for method of determining payload distribution. The tires in this example are rated at scarcely more than empty vehicle weight; permissible payload would be under 200 pounds, including driver's weight.)

13. You replace the rear tires with 750x16 8-ply, rated at 2100 lbs. each. How are you fixed for payload capacity now? (See Exhibit C for two ways of calculating this, arriving at widely different answers. Be sure you use the right method.)

14. You are specifying a special body type. If payload and driver, including shelves or racks, weigh  $\frac{3}{4}$  ton, dis-



## HOW TO DETERMINE PAYLOAD DISTRIBUTION

1. Establish "C-A" dimension (distance from back of cab to center line of rear axle) ..... 60 $\frac{1}{2}$ "
2. Establish  $\frac{1}{2}$  of body loadspace length ..... 48 $\frac{1}{2}$ "
3. Subtract (2) from (1) ..... 12"
4. Divide (3) by wheelbase ( $12 \div 100$ ). Percentage arrived at is percentage of payload on front axle ..... 12%
5. Balance of payload is on rear axle ..... 88%

tributed 10% on front and 90% on rear, and the chassis weighs 1875 lbs. front and 980 lbs. rear, what is the maximum permissible weight of the truck body, without overloading tire equipment?

15. The average age of motor trucks scrapped in 1951 is reported as 14 years. In buying new route trucks for frequent-stop deliveries, what chassis specifications should be rechecked to preclude frequent renewals of parts?

16. If garage space is limited, do you compute the cube of each new truck's loadspace per square foot of garage space?

17. If the loading platform is a bottleneck, do you compute the volume that can be loaded in the same time with different body types?

18. What is the cost of body rust and denting during the life of a truck?

19. What is the extra cost of excess deadweight per 1000 lbs. during a truck's life—in gasoline, tires, and replacements of affected parts?

20. What is the extra cost of two trips a day, during a truck's life, to deliver a volume that could be handled in one trip with adequate loadspace?

21. How much more payload can be delivered in a day if the load is worked from the front only, instead of front and back?

22. A truck maker's warranty stipulates that the Gross Vehicle Weight ratings are based upon observance of the rated capacities of tires, axles, and springs. Do you ignore this stipulation when buying, and knowingly overload your trucks, or do you buy trucks with G.V.W. rating commensurate with the job to be done?

23. If you consistently overload because of your payload in relation to weight of body and racks and capacity of tires, springs, axles, brakes, clutches, bearings or other parts, what is the excess cost in percentage per truck life, compared with trucks you do not overload?

24. Do you keep truck manufacturers informed of where you experience excessive maintenance costs and urge improvements to meet frequent-stop delivery needs?

## Calculating Permissible Payload

Front		Rear
2581 lbs.	Chassis and Body Weight	2789 lbs.
3600 lbs.	Springs (Ground Weight Rating)	4650 lbs.
2900 lbs.	Axle Rating	5000 lbs.
4200 lbs.	Tire Rating—2100 lbs. each	4200 lbs.
5%	Payload Distribution	95%

### Method A

Gross Vehicle Weight Rating is generally calculated by axle capacity, without regard for payload distribution.

G.V.W. = 2900 + 5000 ..... 7900 lbs.

Subtract:

Chassis & Body Weight

(2581 + 2789) ..... 5370 lbs.

Permissible Payload ..... 2530 lbs.

But according to Method B, this would overload the rear tires by nearly 1000 lbs.

### Method B

Considering payload distribution, the weakest factor is rear tire rating. Take rear section of truck only:

Rear Tire Rating ..... 4200 lbs.

Subtract:

Chassis & Body Weight .... 2789 lbs.

Permissible Payload, rear .... 1411 lbs.

This is 95% of total Payload  
Therefore total Payload is: .. 1485 lbs.

Subtract:

Extra weight of oversize tires 44 lbs.

Permissible Payload ..... 1441 lbs.

(Please turn to page 324)

# Revitalizing a Purchasing Department to Meet a Growing Company's Need

How Carrier Corporation is solving the problems of expansion, change, and diversification with decentralized buying, directed by central staff

Carrier has 37 major product lines, and its plants are organized on a mass production, assembly line basis.



The improvement of purchasing methods in a rapidly growing company—reconversion—the change from custom-built equipment to standard lines and mass production—the change from centralized to decentralized buying—the definition of staff purchasing functions as a part of management policy—the development of an effective purchase analysis program—any one of these subjects would make a story in itself. All of this has occurred at Carrier Corporation within a short time.

This is the first of two articles on Carrier's goals and experiences in purchasing. It describes the policies, methods, and organizational changes.

The cost reduction program and the practical results it has achieved will be featured in next month's "Purchase for Profit" issue.

**T**WO simple words describe the progress of Carrier Corporation in the booming air conditioning industry—growth and change. The Carrier organization has gone through several stages of managerial evolution in its less than fifty years of existence. Business volume has shown some changes too—in the past ten years alone, from \$28,000,000 to \$164,000,000 annually.

The concentration of this growth and change in the past few years has been a big challenge to all Carrier departments—to Purchasing,

particularly, since it was a somewhat late starter in a company with a heavy engineering tradition.

When Adolph G. Ruediger was brought into the company's Syracuse, N. Y., headquarters in early 1952 as Director of Purchases, he faced these three major jobs.

1. Streamlining of the department to keep pace with galloping production demands of the expanding company;
2. Decentralization of the department to fit in with the company's shift from a functional

type organization to one based on products and markets;

3. Intensification of a cost reduction program to improve Carrier's position in a highly competitive market.

How Carrier's purchasing was adapted to rapidly changing conditions in its industry and in the national economy, and how it was fitted into the new organizational structure are the subjects of this article. How an analytical cost-reduction program was established, and the practical results it has been producing, will be described in a second article, to be featured in PURCHASING's May "Purchase for Profit" issue.

### Growing Pains

When Mr. Ruediger came to Carrier from the automobile industry, the nature of the company's business had begun to change swiftly and significantly. After a distinguished World War II production record, Carrier had undertaken an



Purchased parts are loaded on conveyors to feed the final assembly lines. Steady flow of materials is a "must".

aggressive expansion campaign with special attention to the development of standard products for civilian

demand. Despite unanticipated difficulties raised through the inability of suppliers to furnish materials, especially steel, Carrier management kept to its course of building for the future. Sales volume and net earnings of the company progressed steadily to higher levels in each succeeding year.

By 1952, it had 37 major product lines in the air conditioning, refrigeration and allied fields. Emphasis had switched from job-shop work on custom installations to line production of standard units.

### Liaison Needed

Purchase of materials and components on a production basis, with consideration for value as well as performance, had become a necessity. Shortages and rising prices pointed up the need for closer liaison between purchasing and engineering for agreement on alternate specifications and the development of suppliers that could meet them.

Previously, specifications had come from production and engineering, with no provision for alternates. As business mushroomed, sales forecasts sometimes fell behind actual demand for Carrier products, and production material requests were stepped up accordingly. As a result, purchasing was occasionally out on a limb so far as meeting schedules was concerned.

### Toward Closer Teamwork

Mr. Ruediger, with a sound background of production buying experience, set about to develop closer



#### CENTRAL PURCHASING STAFF

Adolph Ruediger . . . . .	Director of Purchases
Charles H. Maurer . . . . .	Assistant Director of Purchases
Victor H. Donovan . . . . .	Non Production Buyer
Benjamin K. Lees . . . . .	Purchase Analyst

#### MACHINERY & SYSTEMS DIVISION

Adolph Ruediger - Divisional Purchasing Agent (Acting)

MACHINERY DEPT.	AXIAL DEPT.	RAW MATERIALS	NON PRODUCTION
Homer J. Ritter, Purchasing Agent	Robert T. Kells, Purchasing Agent	Norbert A. Wiesnet, Purchasing Agent	Finn H. Jensen, Purchasing Agent
James L. McGraw, Buyer	Harry C. Francis, Subcontracting	Milton T. Steckel, Buyer	Charles D. Burkett, Buyer
	Vincent F. Molonea, Purchasing Agent	Harry W. Honan, Buyer	Robert S. Younglove, Buyer
	Anthony F. Drazek, Subcontracting		Charles B. Townsend, Buyer
	Alton L. Hansee, Buyer		Theodore H. Reinhard, Buyer

#### UNITARY DIVISION

Raymond W. Whiting - Divisional Purchasing Agent

##### PACKAGED GOODS

Leslie Meikleham - Purchasing Agent  
Edgar M. Hamlin - Buyer  
Donald S. Barfoot - Buyer  
Walter Bogart - Buyer

##### COMPRESSION

Jess S. Cillan - Purchasing Agent  
Raymond E. Yackel - Buyer

#### ALLIED PRODUCTS DIVISION

Thurlow T. Travis - Materials Manager  
Kermit Maurer - Purchasing Agent  
August Butler - Buyer  
Angelo Capozzi - Buyer

#### SERVICE DEPARTMENT

Walter Gulick - Purchasing Agent  
William Drake - Buyer  
Patrick Collins - Buyer  
Anthony Romano - Buyer



Expansion and condenser coils make up one of the most important items on Carrier's buying list. Decentralized purchasing is the more practical because there is little duplication in requirements of the several divisions.

buying - engineering cooperation. Contacts with engineering were increased. "We tried to show first, Mr. Ruediger says, "that we in purchasing are in a wonderful spot to help out production and engineering, through our contacts with suppliers and our knowledge of markets. Publicizing this has paid off here—in better recognition of purchasing and friendlier relationships all around."

Cultivation of this improved understanding was not merely a matter of talking about it. A series of training meetings was started to give buyers a better technical understanding of the materials and supplies bought, and to improve their cost analysis techniques. Reduction of paper work—chiefly through the greater use of blanket orders—gave buyers more time to study more closely engineering and production requirements.

#### **Purchasing Fully Informed**

One buyer, who knows material control and is familiar with engineering problems, has been sitting in on all engineering meetings, so that purchasing will be fully informed on the engineering viewpoint. Under present plans, two of a group of student engineers now in manufacturing will be assigned to the purchasing department. Mr. Ruediger hopes to be able to have

them do staff work for about six months, and then be assigned to particular divisions—perhaps as an assistant buyer. After a year, they might be transferred to another division, eventually "getting the feel" of how the entire organization operates.

#### **Analyzing Costs and Sources**

As closer liaison with engineering developed, purchasing began analysis of the five items that account for about 66% of the Carrier buying dollar: raw materials, castings and forgings, electrical components, coils, and fractional horsepower compressors. How effective this value analysis has been will be detailed in next month's issue. But a quick glance now at the change in castings buying, for example, gives an idea of how the introduction of the creative approach to purchasing quickly began to benefit Carrier.

Because of the large volume of castings bought by Carrier, Mr. Ruediger made them one of the prime targets in his cost-reduction through purchasing program. After a careful analysis of prices paid various vendors, Mr. Ruediger and his staff began an intensive study to see where costs could be reduced.

With the assistance of a foundry technical staff, set up under his di-

rection, but instructed to report directly to the vice-president in charge of manufacturing, a study of suppliers in other geographical sections was begun.

#### **Close Vendor Cooperation**

The staff, headed by a retired foundry superintendent, and aided by Carrier production personnel, worked closely with Carrier's engineering department and possible vendors in studying quality, mechanization of foundries, and other important factors. Once the group qualified a foundry, it became an acceptable supply source. In many cases specifications were eased so that a foundry could be qualified, but close coordination with engineering facilitated these changes when performance was the same.

The entire study took many months, but brought substantial results: lower prices, improved foundry practices among suppliers, price reductions on the part of local vendors, and an excellent list of sources. More complete details of actual money savings will be given in the next instalment of this article.

#### **Sales Talk by Buyers**

Under the new concept of purchasing at Carrier, the buyers became "salesmen" as well. During the castings operation mentioned above, Mr. Ruediger and his group "sold" many large foundries on the refrigerating and air-conditioning industry. They pointed out its amazing growth and the sales-potential for the foundries in companies like Carrier.

In the same way, during the days of steel shortages, they went directly to the steel mills, armed with data on their growth industry. Why treat us on the traditional basis of "historical allocations", they asked, when a few years from now we'll be among your biggest customers? They backed up the question with figures and charts showing the company's rapid growth in the past five years and its expected growth in the next five.

"This 'selling' helped us tremendously," Mr. Ruediger says. "We got the benefits of it earlier, despite the easing in steel, than if we had not gone out. When we were through, we had 8 mill sources on steel in a tight market."

Along the same idea, Carrier's purchasing agents carry company product booklets on all of their plant trips—many with cutaway shots of

## Decentralization for Growth

Design of the new organizational structure was no arbitrary idea of management imposed from above. Committees were named to recommend how functions of each department should be performed under the new organization. Purchasing's special committee included the comptroller, the production manager of one of the divisions, a member of the executive vice-president's staff, and three members of the purchasing department, including Mr. Rue-diger.

**Unitary Equipment Division**—Responsible for reciprocating compressors, room air conditioners, year-round residential units, and other self-contained equipment.

**Machinery and Systems Division**—Responsible for centrifugal refrigeration machines, air and gas compressors, absorption equipment, axial flow compressors, and in general, all products that enter into air conditioning and industrial refrigeration systems of the central station type.

*Allied Products Division* — Responsible for food freezers, unit heaters, automatic ice makers, and

The three divisions handle groups of closely related products. They have complete and separate responsibility for development and design, factory engineering, purchasing, manufacturing, quality control, accounting and distribution.

Under this new arrangement, purchasing has established a **type** of "staff and line" operation, with buying at the staff level limited to major contract items, like raw materials, and, temporarily, commonly used items and M. R. O. supplies.

Otherwise each divisional purchasing group performs all purchas-

[illegible]

In line with the decentralization of purchasing to the divisional and individual buyer level, buyers are relieved so far as possible from detail work and reliance on central files. Each buyer has at his desk a Quotation Chart and Purchase Order Record (on reverse sides of the same loose-leaf sheet) covering all parts or items for which he is responsible. He also has a summary record, in numerical sequence, of all purchase orders he issues.

## Responsibilities of Carrier's CENTRAL PURCHASING STAFF

1. To formulate purchasing policies and basic procedures—to establish and maintain an up-to-date Purchasing Policy Manual for all buyers—to spot check purchase performance for adherence to policy and procedures by the divisions—to check specifications for adherence to industry standards and for analysis of the cost of special features requested.
2. To establish national discounts and contracts for Carrier which will be available to divisions, subsidiaries, and field offices.
3. To keep all divisions informed on market trends and trade conditions for the various commodities, products and services purchased by them.
4. To investigate new sources of supply, new materials, and new processes—independently and on request of the divisions.
5. To review purchases by the divisions so as to guard against overlapping of purchases and duplication of effort.
6. To assist in arriving at the best over-all decision when there is conflict between divisions in the use of a single source; and to resolve such matters with the vendors involved.
7. To provide for the maintenance of trade relations records, and records on purchase volume by commodities.
8. Upon request, to review divisional purchasing department expenses and budgets.
9. To assist in establishing standard costs for purchased parts and materials.
10. To develop and direct a buyer training and value analysis program.

ing functions necessary to obtain materials for products made in that division. In addition, it is responsible for watching market trends, investigating new materials, etc., to the same extent that it would if there were no Central Purchasing Staff.

In general, the purchasing committee on the reorganization found that there were few instances where price and other advantages could be obtained through a single purchase of the combined requirements of a specific item of production material. They noted also that the common use of a specific item by more than one of the divisions is the exception rather than the rule.

On that basis they recommended that each division buy its own requirements, with provision for continued study of pooled buying. When there is evidence of advantage in pooling purchases on a specific item, the divisions will work out the details of the purchase between them.

Each division also buys its own tooling.

All records are kept at each di-

vision, but regular reports on operations are forwarded to the central office for study.

All divisions are now located in Syracuse, but a new \$5,000,000 plant is being planned for the southern part of the United States.

Functions of the Central Staff are detailed in the chart accompanying this article. To aid carrying out these basic responsibilities, the staff will prepare and issue regular reports to the divisions. Among the subjects to be covered are:

Commodity outlook and relationship to Carrier purchasing policy;

Outlook on availability of scarce items;

Purchased materials price forecast;

Carrier suppliers over \$100,000;

Special commodity studies;

Cost reviews;

Reports on volume and effect of rush requisitions.

An additional responsibility of the staff is the negotiation for disposal of scrap for all divisions.

The Central Staff has over-all responsibility for directing the company's purchasing cost reduction program. Each buyer will be measured for efficiency by means of a quarterly report on his cost reduction activities, with these factors governing:

- a. The number of projects he is working on;
- b. The total dollar amount of cost reduction he has accomplished.

### Emphasis on Efficiency

Each buyer will operate on his own, but is free to call upon the Central Staff for assistance if time or circumstance does not allow him to carry through his idea for cost reduction.

Occupying an important part on the Central Staff is the Purchase Analyst. He assists division buyers in their cost reduction projects, but has the right to examine possible cost reduction projects in any division on his own, and to make suggestions to divisional groups. Training in purchase analysis for all buyers is now under way, but until the program is complete, the Central Staff analyst will continue this advisory work.

The efficiency measurement plan, the development of the purchase analysis system, and the practical results they are already developing will be fully covered in next month's special issue.

### Objectives and Opportunity

A brochure recently distributed by Carrier Corporation was described by its dynamic president, Cloud Wampler, as the most important ever published by the company. It outlined the new organizational changes that have taken place, and described the benefits expected. These words, written in a general sense, have a particular meaning for the purchasing man who is equipped and willing to take his place on the management team:

"The corollary benefits that will result from the new organization structure are numerous. Among other things, all-round executives will be developed. Men will be trained to think and act with respect to every phase of the business.

"Responsibility will be more evenly spread throughout the organization. The objective is to have an increasing number of decisions made at the operating levels of management. It is believed that these decisions will reflect more adequately and more promptly the needs of the customer."

# The Pulse of Business

APRIL, 1954

## **PURCHASING'S** **Summary of** **economic** **conditions**

President Eisenhower's remark that government action would be taken if the business slide continued in March is getting a second look. In the first place, statistical data on what actually happened during the month will not be available for a while. Second, it is being pointed out by some of his advisers that the President really meant that the critical period would be the entire spring season beginning in March, rather than the particular month. This reported interpretation is borne out by Treasury Secretary Humphrey's recent remarks before a Senate subcommittee. "I am not looking for any sudden or immediate turn in the economy," he said. And, he added, it may be some time - perhaps May - before there is an upward change.

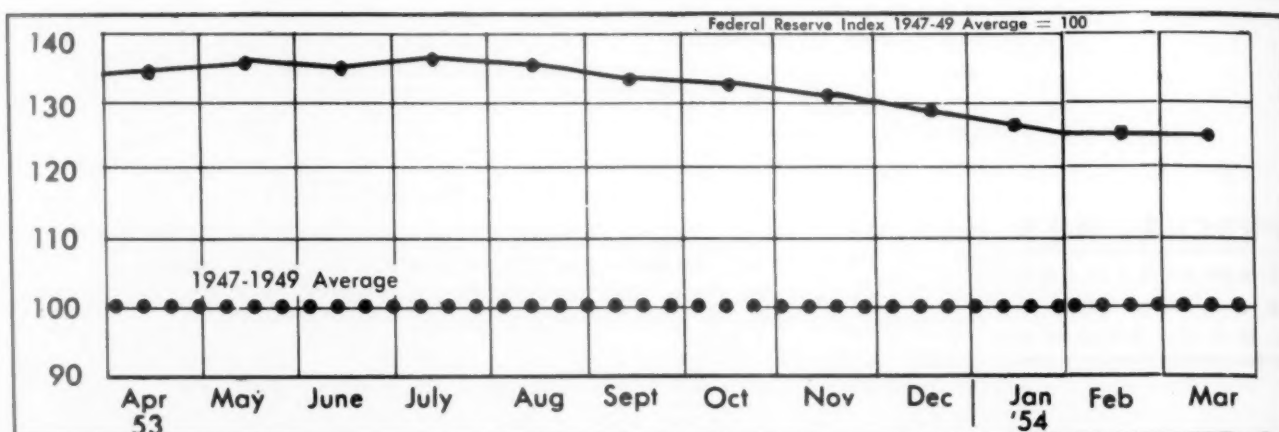
Meanwhile, there has been little marked improvement in the over-all business situation, but lots of cautiously optimistic talk. Latest industrial production figures show another 2 point drop in the February-March period. The steel rate continues to slide, and the trade sources reported expecting a comeback this spring are said to be changing the date to around mid-year. Unemployment is still high. Thirty-four out of 149 major labor markets have "substantial surpluses of workers" - 6% or more unemployment - according to government reports. (State unemployment compensation claims, however, have been dropping.)

Executive optimism is relatively high, nevertheless. Auto makers H.H. Curtice of General Motors and L.L. Colbert don't figure on any slump. Mr. Colbert is sticking by his earlier estimate that the industry will produce and sell 5 million cars in 1954. Allegheny Ludlum Steel Corp. thinks inventory adjustments by steel consumers "are expected to run their course" during the March quarter. T.M. Girdler and C.M. White, top men of Republic Steel, expect that the steel business will improve as the year progresses and that the company will have a good year. Reynolds Metals reports an upturn in aluminum products orders, but says it's too early to know whether the downward sales trend is over.

Mr. Consumer is a little more cautious, and is making his plans accordingly. The Federal Reserve Board's annual survey of consumer finances shows that U.S. consumers are less confident about their financial position this year and plan to buy fewer cars, houses, furniture and appliances than last year.

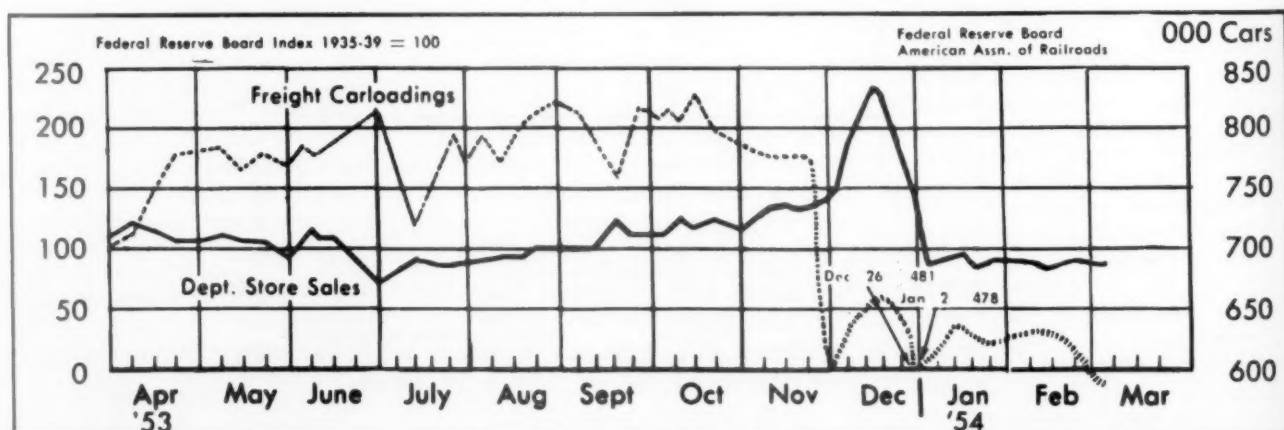
## THE PULSE OF BUSINESS

### PRODUCTION



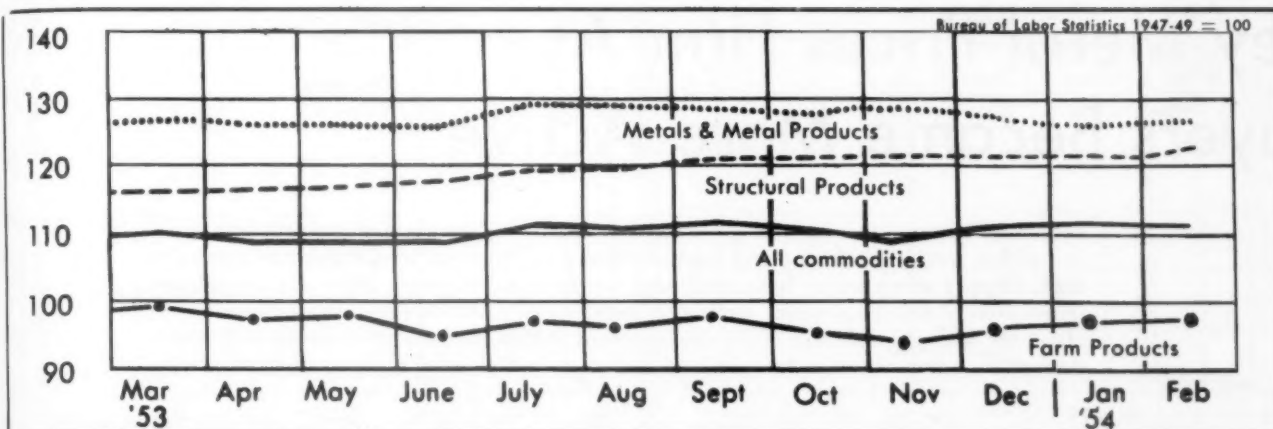
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Industrial Production Index .....	1935-39=100	123	125	134	- 2.4	- 8.3
Steel Production (Weekly) .....	000 net tons	1,616	1,772	2,284	- 8.9	-29.3
Electric Power Production (Weekly) .....	mil KWH	8,586	8,674	8,173	- 1.1	+ 5.0
Bituminous Coal Production (Weekly) .....	000 net tons	6,315	7,835	8,218	-19.4	-23.2
Auto, Truck & Bus Output (Weekly) .....	units	132,757	127,319	155,608	+ 4.2	-14.7
Petroleum Output (Daily Average) .....	000 bbls.	6,327	6,172	6,343	+ 2.5	- 0.3

### TRADE



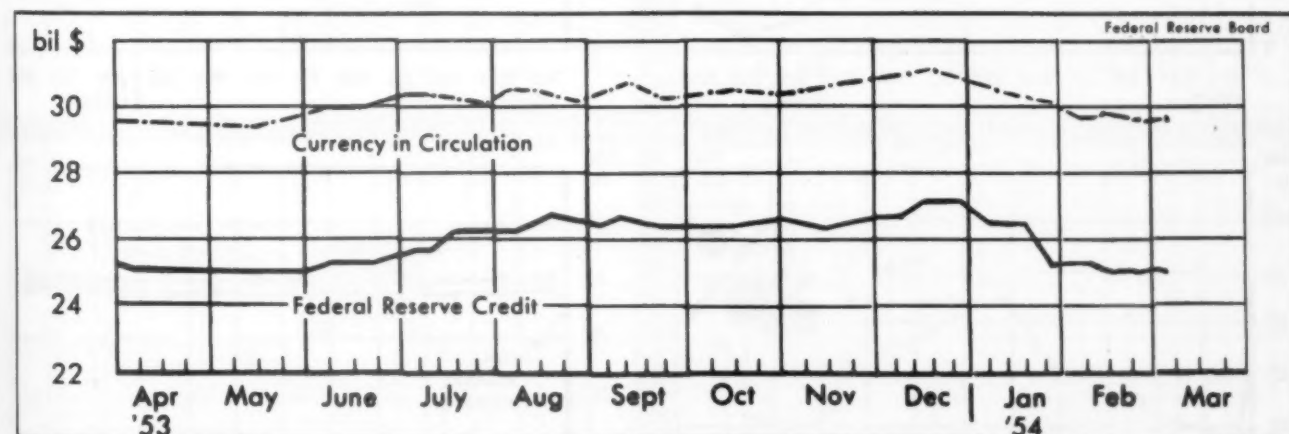
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	% OF CHANGE IN YEAR
Dept. Stores Sales Index (Fed. Res.) .....	1935-39=100	85	87	96	- 2.3	-11.0
Commercial Failures (Dun & Bradstreet) ....	no.	223	238	180	- 6.4	+23.8
Freight Carloadings .....	cars	590,567	624,385	684,864	- 5.3	-13.8
Miscellaneous Carloadings .....	cars	325,882	330,179	374,119	- 1.4	-12.9

## PRICES



	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN	
					MONTH	YEAR
All Commodities (BLS) .....	1947-49=100	110.5	110.9	109.6	- 0.4	+ 0.8
Farm Products .....	1947-49=100	97.9	97.8	97.9	+ 0.1	0
Metals & Metal Products .....	1947-49=100	126.2	127.2	124.6	- 0.8	+ 1.2
Structural Products .....	1947-49=100	121.0	120.9	114.6	+ 0.08	+ 5.5
Steel Billets (Pittsburgh) .....	net ton	\$62.00	\$62.00	\$59.00	0	+ 5.0
Steel Scrap, heavy melting, Pitts .....	net ton	24.50	28.50	44.75	-14.1	-45.3
Copper, electrolytic .....	lb.	.293 <sup>3</sup> / <sub>4</sub>	.30	.291 <sup>1</sup> / <sub>2</sub>	.34	+ 0.8
Rubber (rib-smoked sheets) .....	lb.	.201 <sup>1</sup> / <sub>4</sub>	.20	.261 <sup>1</sup> / <sub>4</sub>	+ 1.4	-22.9

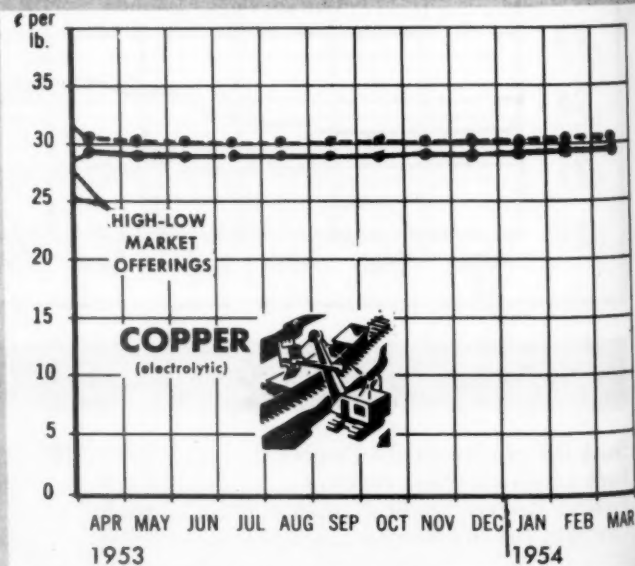
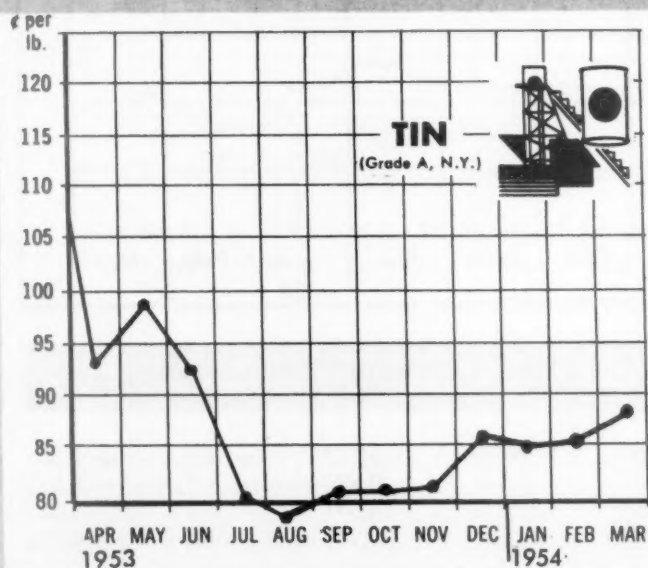
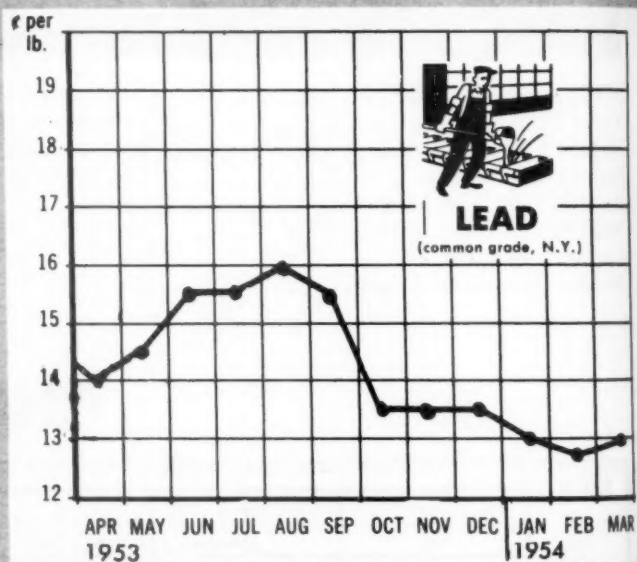
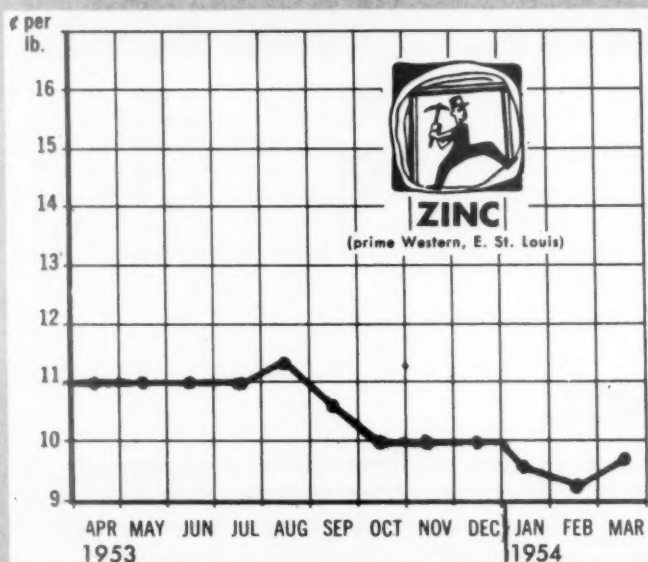
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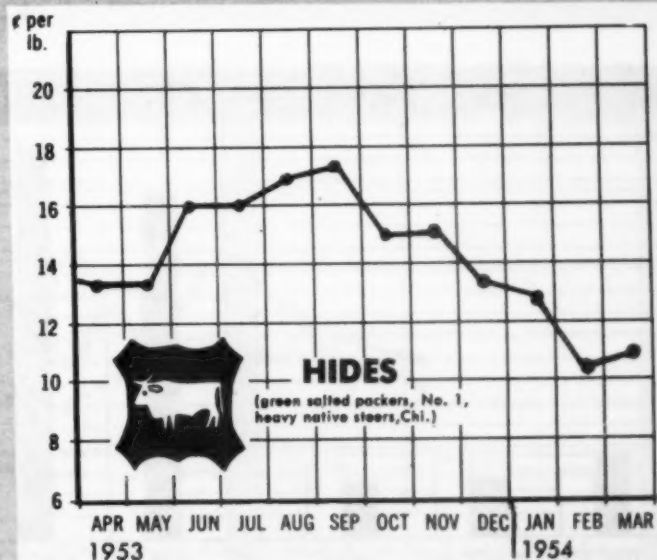
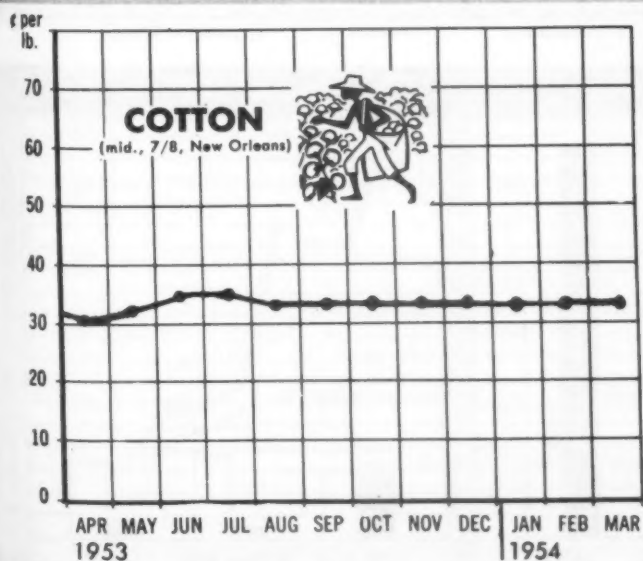
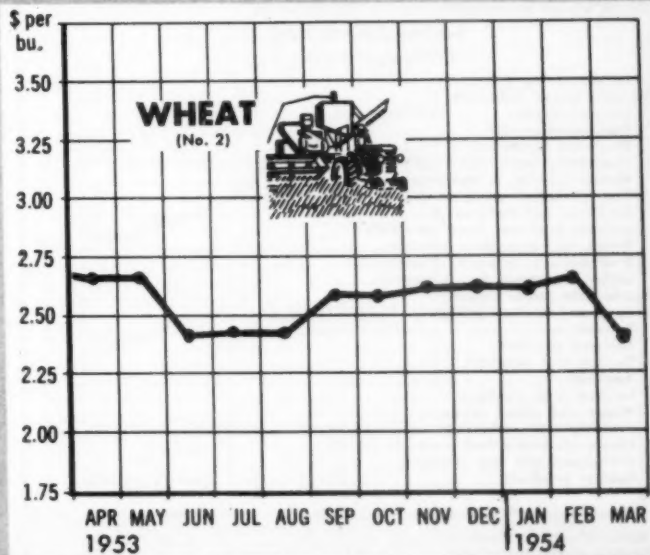
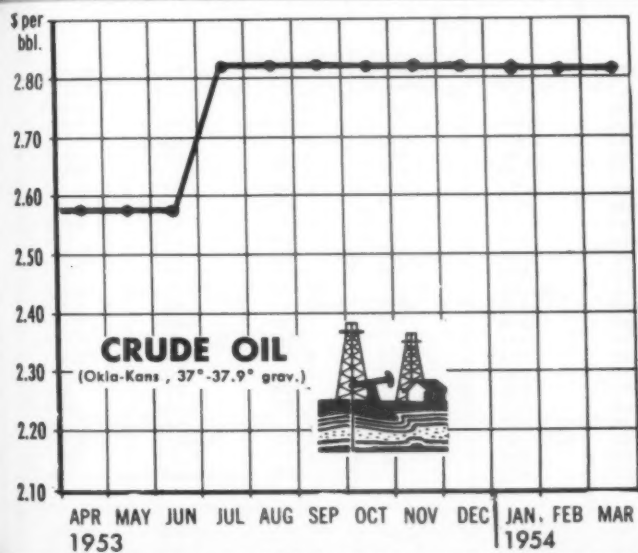
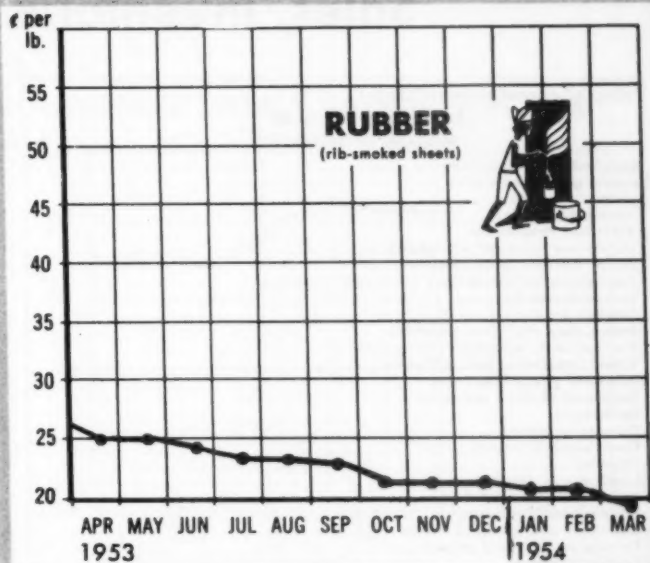
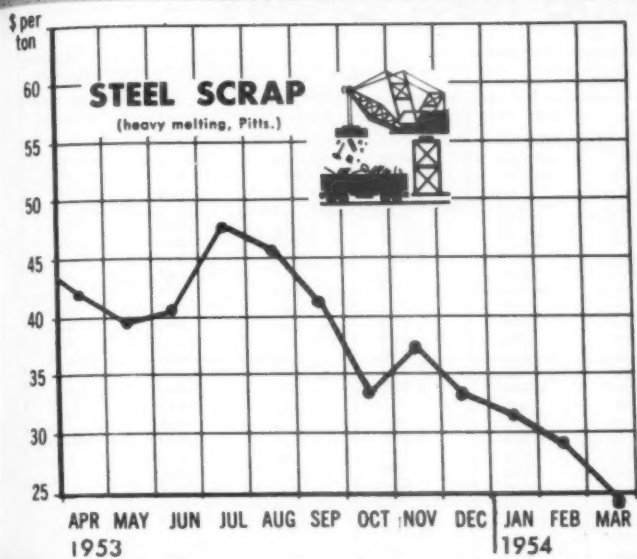


	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN	
					MONTH	YEAR
Stock Prices (Standard & Poor's) .....	1926=100	212.0	207.6	207.4	+ 2.1	+ 2.2
Bank Clearings (New York) .....	mil \$	10,467	9,537	9,917	+ 9.7	+ 5.5
Federal Reserve Credit .....	mil \$	25,638	25,815	25,941	- 0.7	- 1.2
Currency in Circulation .....	mil \$	29,870	29,923	29,780	- 1.2	+ 0.3

# Key Metal Prices Firm As Buyers Become More Active

Increased buying by industrial users has brought about unexpected strength in a number of key metals. Both zinc and lead prices are up, and copper futures are unusually high. Copper scrap prices have also been on the rise. Although there are no definite indications of heavy inventory buying by metal users, producers are reported optimistic about the immediate future. They are also said to feel that the government will begin stockpiling again — particularly in lead and zinc — which would help to stabilize prices.





# THE PULSE OF BUSINESS

## Sales, Inventories and New Orders

### Value of Manufacturers' Sales

Seasonally Adjusted  
(Millions of Dollars)

All Manufacturing Industries	24,507
Durable goods industries	12,508
Primary metals	2,169
Fabricated metals	1,190
Electrical machinery	1,337
Machinery (except electrical)	2,138
Motor vehicles & equipment	2,162
Transportation equipment (exc. motor vehicles)	996
Furniture and fixtures	370
Lumber products (exc. furniture)	710
Stone, clay and glass products	535
Professional, scientific instruments	377
Other industries, incl. ordnance	524
Nondurable goods industries	11,999
Food and kindred products	3,377
Beverages	544
Tobacco products	312
Textile-mill products	1,116
Apparel	880
Leather and products	269
Paper and allied products	695
Printing and publishing	758
Chemicals and allied products	1,606
Petroleum and coal products	2,018
Rubber products	424

### Book value of Manufacturers' Inventories

Seasonally Adjusted  
(Millions of Dollars)

All Manufacturing Industries	44,330
Durable goods industries	24,565
Primary metals	3,208
Fabricated metals	2,484
Electrical Machinery	3,081
Machinery (exc. electrical)	5,468
Motor vehicles & equipment	3,009
Transportation equipment (exc. motor vehicles)	2,567
Furniture and fixtures	638
Lumber products (exc. furniture)	989
Stone, clay and glass products	854
Professional, scientific instruments	850
Other industries, incl. ordnance	1,417
Nondurable goods industries	19,765
Food and kindred products	3,662
Beverages	1,259
Tobacco products	1,816
Textile-mill products	2,584
Apparel	1,772
Leather and products	532
Paper and allied products	1,060
Printing and publishing	730
Chemicals and allied products	2,900
Petroleum and coal products	2,584
Rubber products	866

### Manufacturers' New Orders (Adjusted)

All Manufacturing Industries	24,519
Durable goods industries	12,454
Nondurable goods industries	12,065

	1953					1954
	Jan.	Sept. (r)	Oct. (r.)	Nov. (r)	Dec. (r)	Jan. (p)
All Manufacturing Industries	24,507	24,882	24,990	24,304	24,126	23,705
Durable goods industries	12,508	12,221	12,376	11,867	11,576	11,441
Primary metals	2,169	1,969	1,985	1,874	1,645	1,597
Fabricated metals	1,190	1,332	1,139	1,150	1,076	1,153
Electrical machinery	1,337	1,550	1,391	1,324	1,349	1,317
Machinery (except electrical)	2,138	2,027	2,039	2,068	1,902	1,966
Motor vehicles & equipment	2,162	1,927	2,095	1,918	2,046	2,029
Transportation equipment (exc. motor vehicles)	996	840	1,140	925	947	885
Furniture and fixtures	370	369	364	334	345	364
Lumber products (exc. furniture)	710	667	715	723	731	770
Stone, clay and glass products	535	602	575	583	540	512
Professional, scientific instruments	377	290	353	402	423	330
Other industries, incl. ordnance	524	648	580	566	572	518
Nondurable goods industries	11,999	12,660	12,614	12,437	12,550	12,264
Food and kindred products	3,377	3,474	3,890	3,771	3,863	3,824
Beverages	544	669	666	635	572	651
Tobacco products	312	320	304	339	304	291
Textile-mill products	1,116	1,003	1,038	1,006	1,040	1,009
Apparel	880	985	900	835	873	896
Leather and products	269	300	243	251	267	261
Paper and allied products	695	783	738	709	701	686
Printing and publishing	758	649	745	778	774	722
Chemicals and allied products	1,606	1,675	1,643	1,606	1,601	1,532
Petroleum and coal products	2,018	2,314	2,062	2,113	2,186	2,023
Rubber products	424	488	385	394	369	n.a.

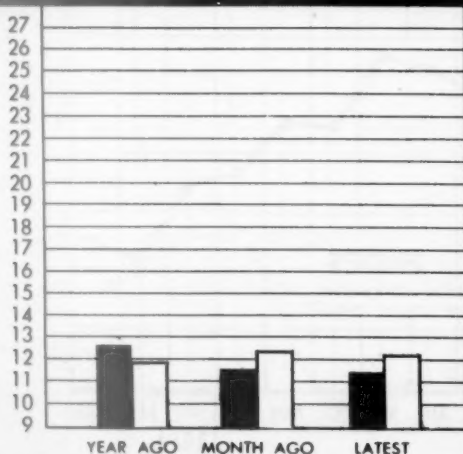
p—preliminary

r—revised

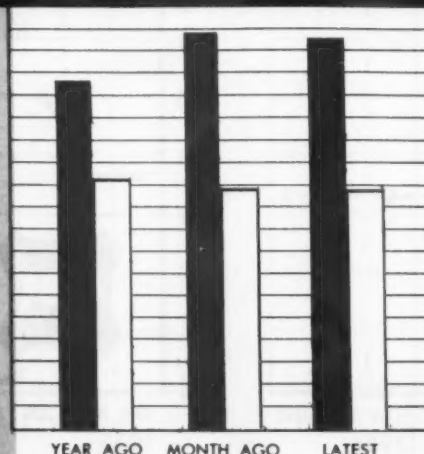
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BILLIONS  
OF \$

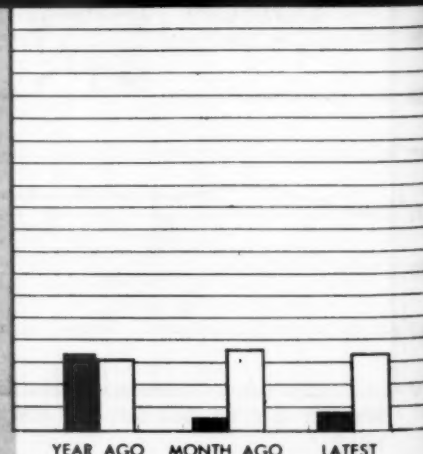
### SALES



### INVENTORIES

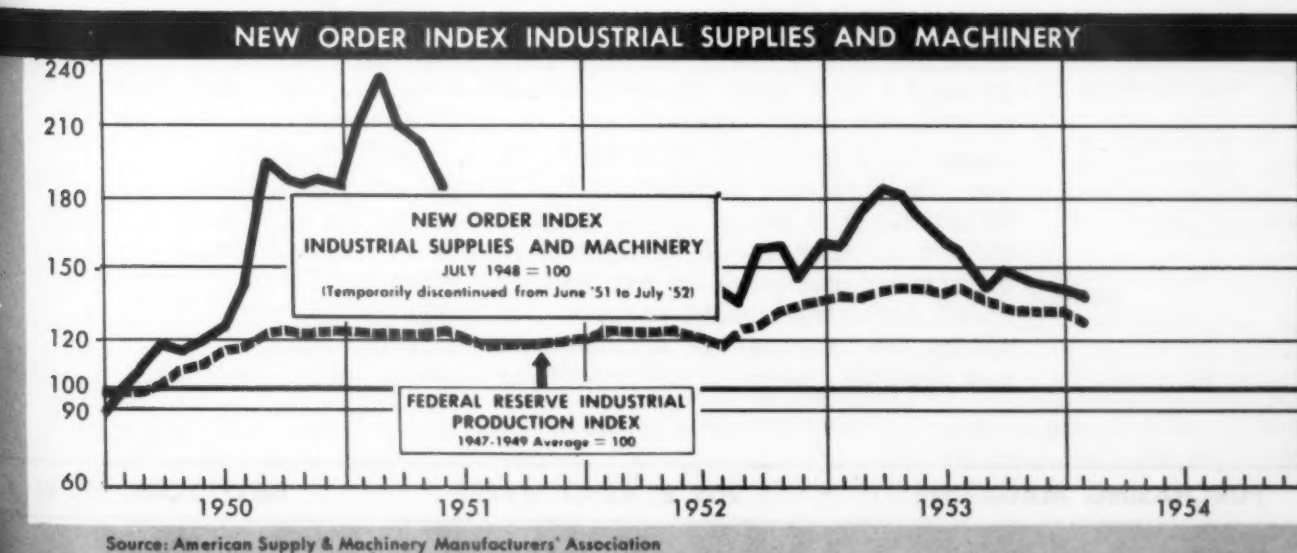
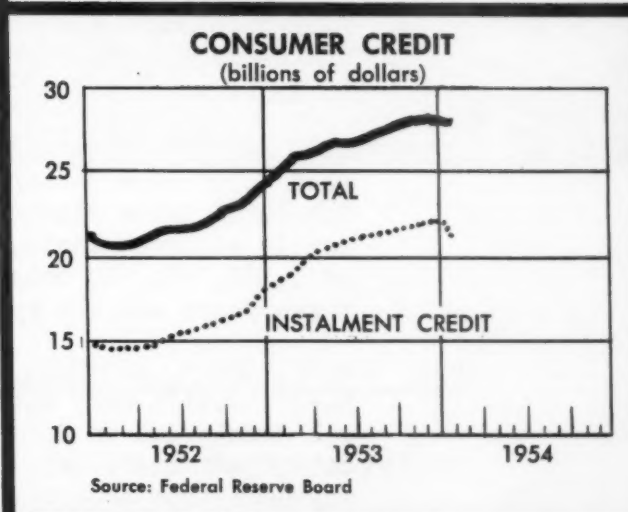
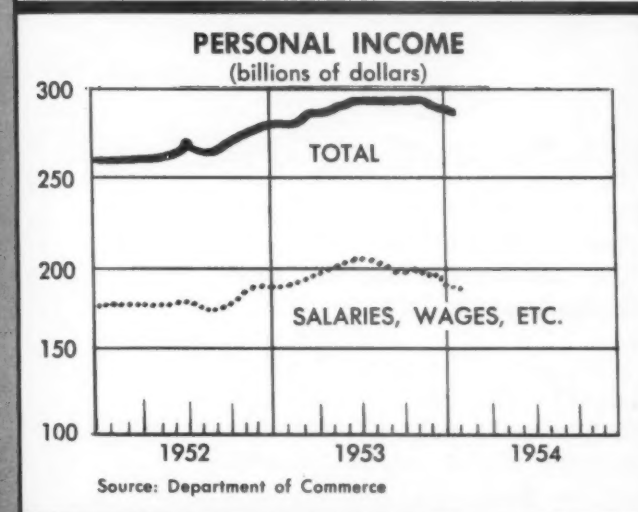
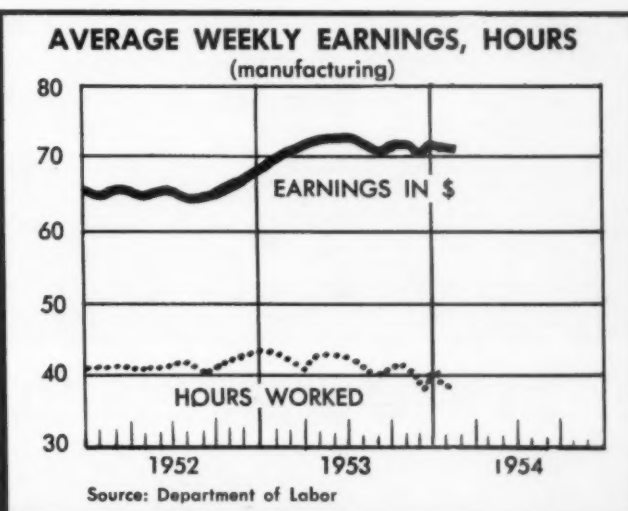
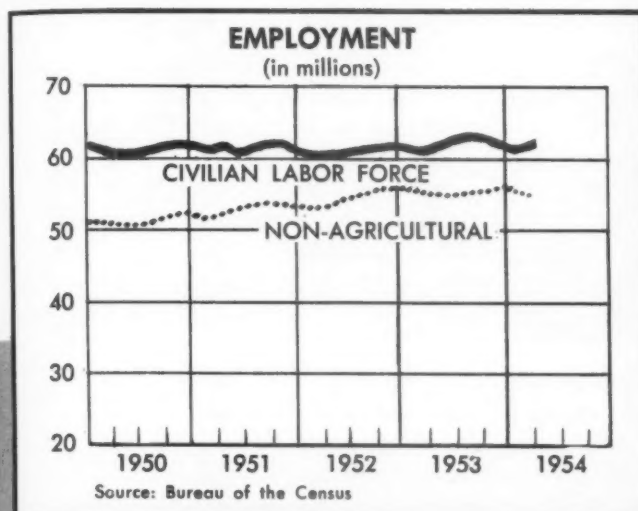


### NEW ORDERS



DURABLE GOODS

NON-DURABLE GOODS



### Straws in the Trade Wind

BUSINESS SPENDING TO DROP - Business plans to spend about 4% less this year than it did in 1953. Outlays are expected to total \$27.2 billion, according to a survey made by the Department of Commerce and the Securities and Exchange Commission. Spending by manufacturing firms, plans show, will be 7% lower than last year. The same survey shows that business as a whole thinks sales will approximate those of 1953, although durables producers foresee an 8% drop.

CONSTRUCTION PICKING UP - F.W. Dodge Corp. reports that construction contracts awarded in 37 eastern states in February were over \$1.2 billion, a new record for the period. This is a 20% rise over February, 1953. For the first two months of this year, awards were \$2.2 billion, 13% over January-February of last year, and 9% higher than the previous two-month high, set in 1951.

HOME STARTS SET GOOD PACE - Private home starts in February rose 7,100 from January to a total of 71,800. The Bureau of Labor Statistics reports that, on a seasonally adjusted basis, starts were at an annual rate of 1,180,000. In only four months during the past three years was the rate higher.

WHAT TARIFF LIFTING MIGHT DO - What would happen if all U.S. tariff duties were suspended? The President's Special Commission on Foreign Economic Policy (the Randall Commission) says the move might boost imports anywhere from \$800 million to \$1.8 billion a year. But, the group's special report says, it might also put 200,000 U.S. workers out of a job. Employment might be stimulated at some points, it's said, but no specific figures are given.

ALUMINUM A THREAT TO STEEL? - It will be a long time before aluminum makes heavy inroads into steel markets but it would be a good idea for steelmen to keep an eye on this possible competitor. That's the conclusion drawn by a group of economists in a report prepared for the Economic Commission for Europe of the United Nations. The group cited the increasing use of aluminum in such steel-using categories as automobiles, construction, and home appliances. They said the steel industry should protect its position by adopting an imaginative approach and concentrating on new designs, as well as promoting lighter steel products.



## How Douglas Dollars Are Spent

✓ **Reliable Suppliers**

✓ **High Quality Standards**

✓ **Efficient Buying System**

✓ **Low Cost per Order**

**By W. G. Doran, Purchasing Manager**  
Douglas Aircraft Company, Inc.  
Santa Monica, California

**T**HE efficiency of our purchasing operation at the Douglas Aircraft Company is indicated by the fact that in issuing more than 24,000 purchase orders, worth up to \$22 million a month, we have been able to maintain an average cost per order of only \$2.40. This is primarily attributable to the effective allocation of purchasing responsibilities, simplified records and procedures that really work, and efficient methods in processing paperwork.

Authority to establish general purchasing policies at Douglas is one of several responsibilities that

have been assigned to our Director of Material, D. J. Bosio. Such policies are put into practice by the Purchasing Manager, with the aid of our Purchasing Agent, G. L. Wade, and a group of Assistant Purchasing Agents who are respectively and directly responsible for the issuance of orders in the following categories:

1. Raw Materials, such as sheet metals and cast or forged parts which must be further processed by Douglas.

2. Purchased Parts, including

standardized products such as ball bearings.

3. Airborne Equipment, components and assemblies such as turbines and fuel pumps which are purchased from specialized manufacturers.

4. Maintenance, Repair, and Operating Supplies.

The Assistant Purchasing Agent in charge of each of the above activities is a buyer in his own right. He also supervises a group of buyers in his section, to whom the bulk of the actual purchasing responsibility is delegated.

Purchasing Manager W. C. Doran (right) confers with P. A. Gordon Wade and Buying Supervisors Garland Lucian and H. C. Brackney.



Follow-up personnel are assigned to our Assistant Purchasing Agents and Buyers as may be necessary to expedite orders. While these men have no buying authority or supervisory status, they are selected and employed on the basis that each is believed to have the personality and intelligence required to become a buyer if he is allowed to familiarize himself with our methods and procedures. In other words expediting in our organization serves a secondary purpose as an apprentice training program which enables us to fill buying positions with men who have demonstrated their abilities to do our work when vacancies occur at the basic supervisory level.

#### **Buyers' Responsibility**

Complete responsibility for each order, from the time a requisition is received to the time a delivery is made, is vested in the Buyer or Assistant Purchasing Agent who processes the initial requisition. This policy not only eliminates the time-honored practice of "passing the buck" when something goes wrong, but also helps us make better decisions when the time comes to promote buying personnel to better paying positions of greater responsibility in the department.

At present, we have 21 buyers and 36 follow-up men in one office, placing and expediting orders for materials, parts, and supplies used in Douglas plants at Santa Monica,

El Segundo, and Long Beach, California. Our other plant, at Tulsa, Oklahoma, being independently operated, has a separate purchasing department.

#### **Management Is Informed**

A comprehensive picture of our manifold buying activities is maintained for executive personnel by means of a constantly up-to-date commitment record, and other pertinent statistical information used to evaluate our workload, i.e., requisition flow charts broken down by individual buyers and another chart tabulating the total number of purchase orders released from the purchasing department to the typing room each week.

Among other things, the commitment record shows at a glance each order that has been issued for merchandise worth \$500 or more, and the name of each vendor who has received such an order over a period of six months. Incidentally, the Purchasing Manager has found the commitment record an especially useful instrument when vendors come in to complain that they aren't getting a fair share of business from Douglas; for quite frequently it shows that what they are really asking for is more than a fair share.

#### **Efficient Procedures**

Our methods of handling paperwork are such that the purely routine activities required to write any

given purchase order can be completed within the space of a single working day, or less, so that the flow of orders to vendors is prompt, and no bottlenecks are permitted to develop that would impede this flow.

Incoming requisitions are first processed by the buyers in the conventional manner, and competitive price quotations are obtained when necessary. Then, after a supplier is selected, an Addressograph master with the name and address of the vendor is attached to the requisition. As a rule, the address master can be taken from our files. If not, a new master is prepared and carefully checked. We make constant use of these address masters to save the time that would otherwise be spent in retyping a vendor's name, over and over again, over a period of months or years. They also minimize the possibility that paperwork will go astray as the result of errors that can be made in copying addresses.

The address master is used to apply the vendor's name to a ditto master, after which the address master is returned to the file and the remaining purchase order data are added to the ditto master with electrical typing equipment.

The completed ditto master is carefully proofread, corrected if necessary, and passed along to our ditto machine operator, who then prepares the necessary number of purchase order copies that may be required by the vendor, by our cus-

tomer, various personnel in the Douglas organization, and Government inspection agencies.

### Combatting Shortages

Our main headache since the outbreak of the Korean war has of course been the shortage problem. At one time during 1952, for example, we had as many as 4,000 shortages in a single week. In some cases the shortages were unavoidable. But quite often, we discovered,

our difficulties were attributable to the simple fact that we weren't getting requisitions far enough in advance of the required delivery to make adequate lead-time allowances in issuing purchase orders.

Such difficulties are now being greatly reduced by means of an inter-departmental educational program. In addition to emphasizing the general importance of lead-time, this program consists of providing the personnel of other departments with ditto copies of the data we

compile each month on availability, to determine how soon we can reasonably expect to receive the products we order.

### Reliable Vendors

Our procedure in selecting a vendor involves three basic considerations, which are:

1. Quality.
2. Ability to make on-schedule deliveries.
3. Price.

They have to be considered in that



The Purchasing Section occupies a large open office; location of principal product buying groups is indicated by overhead signs.

A dependable flow of high quality materials and components is essential to support the assembly line where mammoth Globemaster II aircraft are nearing completion.



order, because the quality of the materials and products we order is usually determined by customer and government specifications, which must be observed. If received merchandise fails to meet specifications, it is rejected and returned for replacement, which may entail costly production delays. The ability of a vendor to make on-schedule deliveries is also important, because the lack of certain parts of relatively little value in themselves can disrupt production and retard the completion and sale of a product worth many thousands of dollars in the aircraft industry.

Therefore, in order to procure the quality we need, and to avoid production delays and bad vendor relations due to excessive rejections, we make it a practice to try to place our business consistently with companies that we know can deliver quality products. Normally we do not seek bids from people who are not known to meet these qualifications.

Of course these ideal conditions

do not always exist, and in those cases an engineering liaison group is of great assistance to us in finding the practical answer.


Assuming, for example, that we have asked a supplier to submit quotations on a certain article, and his proposal is slightly at variance with our stated requirement. We will then present this to the engineering liaison group and have the requested deviation either accepted or refused at that time.

Or, on other occasions, we may have already placed an order with the vendor for some specific article, and he then finds in the manufacture of that article that he is unable to obtain certain materials that may be required, or he may be unable to meet some of the more far-reaching performance requirements. In these instances, he relays the information to us, and we in turn, through the engineering liaison group, request a material substitution or a relaxation in performance specification or wherever the difficulty lies. If that is approved, we

modify the order accordingly.

It should be emphasized that this procedure is in no sense a means or an effort to get marginal items accepted. The purpose, in both instances, is that the deviation is coordinated all through the system, so that an article when received will be acceptable to our inspection people, who will have been informed by internal processes of the nature of the deviation and its authorization.

As for the third consideration—price—we, as buyers, are not inclined to be prejudiced against the low bidder. When all other qualifications and considerations are equal, he gets the order. With the careful screening and selection of bidders, as already outlined, it is rarely that we take other than the low bid. When this does occur, our files must be, and are, fully documented with the reasons why we accepted other than the low bid. This is a matter of purchasing judgment, but the judgment must be supported by facts.

 <b>DOUGLAS AIRCRAFT COMPANY, INC.</b> <b>PURCHASE ORDER CHANGE ADVICE</b>		FORM 26-18A (REV. 7-50)		Del. Dept.	Date of Change	Date of P.O.	Purchase Order No.
				Contract No.		Account No.	Shop Order No.
NOTE: DATA NOT SPECIFICALLY ALTERED REMAINS UNCHANGED							
VENDOR:				COPY DISTRIBUTION			
				<input type="checkbox"/> Vendor	<input type="checkbox"/> Ack.	<input type="checkbox"/> Res. Adv.	<input type="checkbox"/> Insp.
				<input type="checkbox"/> Accts. Pble.	<input type="checkbox"/> Matl. Control	<input type="checkbox"/> A. F. Res. Insp.	<input type="checkbox"/> Ack. Follow-Up
				<input type="checkbox"/> Cost	<input type="checkbox"/> Rec. 227	<input type="checkbox"/> Bur. of Aer.	<input type="checkbox"/> Purch. File
				<input type="checkbox"/> Traffic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PART NUMBER AND DESCRIPTION:							
PLEASE CHANGE PURCHASE ORDER TO READ:							
References:		Subject to:		Inspection At:			
Reason For Change:							
Vendor's Signature:		Buyer's Signature:		Approved: Purchasing Agent:			

When changes or deviations in specifications are involved in an order, care is taken to see that all personnel concerned are fully informed, as indicated by the copy distribution schedule in the upper right section of the change order advice form. An acknowledgment from the vendor is also required.

## "Pool Procurement" Helps in Producing New Atomic Cannon

By N. Dashko

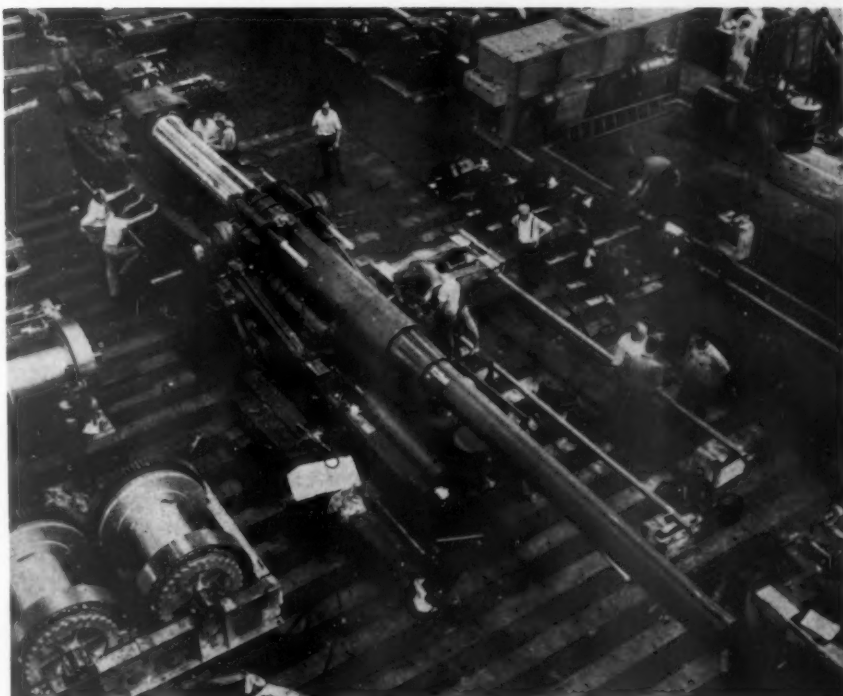
Project Engineer  
Dravo Corporation  
Pittsburgh, Pa.

**C**OMPLEX problems of material procurement, production scheduling, and design and fabrication of special tools, dies, jigs and fixtures had to be overcome to produce the Army's 280 mm. cannon, which is capable of firing an atomic shell.

How these problems were solved is an example of effective teamwork between American industry and Army Ordnance personnel. Out of this experience came a technique which may be described as "pool procurement", an arrangement without which the problems would have been indefinitely more difficult of solution.

The story began in February 1951, when the Ordnance Department, by letter orders through various districts, authorized industry to start production of the new and unique weapon. It was the signal for three prime contractors—Dravo Corporation, Baldwin-Lima-Hamilton Corporation, and Treadwell Construction Company—to undertake manufacturing operations that were different in many respects from their usual lines. Dravo, for example, had never before constructed artillery pieces; its plant facilities are regularly used for production of ore bridges, barges, towboats, and similar structural steel products.

Soon after receipt of the letter orders, drawings began to arrive from Watertown Arsenal, the "parent" arsenal which was completing the prototype model for the weapon. This model, serving as the guinea pig for production models, revealed certain weak points which



Nearing completion on the final assembly floor at Dravo's plant, right on schedule, the cannon is inspected by company and resident Ordnance inspectors. Careful early planning and continuing coordination paid off in the final results.

resulted in immediate design changes. Because of these necessary changes, and the fact that more than 2200 drawings are required for the gun mount alone, it was not until midsummer of 1951 that all drawings were in the hands of manufacturers.

Due to the large volume of defense production in 1951, and the required delivery dates for the mounts, it was apparent that material procurement would be a major problem. The drawings showed requirements for plates and shapes of several grades of carbon, alloy, high tensile, and stainless steel; castings of various alloy steels, aluminum, magnesium, and bronze, plates and shapes of copper, aluminum, and brass. Inquiries to ven-

dors were sent out as rapidly as possible, but the results were disheartening because of the relatively small quantities individually involved, the rigid specifications, and the critical nature of the material during the production emergency. Even with the aid of top military priorities, unsatisfactory delivery promises were received from suppliers all along the line.

Some of these difficulties were overcome by "pool procurement", whereby the arsenal, together with the three prime contractors, placed orders simultaneously with a "pre-selected vendor" for certain items. This relieved the situation with the steel mills, allowing vendors to make production runs of the small special quantities needed at each

facility, to improve delivery dates, and reduce costs. This was especially true of castings, because Watertown Arsenal made casting patterns available to the foundry used by all contractors.

In some cases, procurement ran into a stone wall, necessitating substitutions of materials or the redesign of components. This, of course, had to be approved by the parent arsenal. Examples of such deviations were required low alloy steel angles, which were totally unobtainable; a steel brakewheel casting which was turned down by all foundries because of thin cross sections; and the multitude of alloy steel bars required. It became necessary for each facility to form its own angles from available steel plate, and the brakewheel casting was redesigned as a weldment. In all substitutions, weight was a basic factor. It had to be kept to a minimum, since the cannon must be portable, able to cross bridges and traverse all types of terrain; yet it must withstand shock and stresses of recoil and rugged travel.

As drawings were received from Watertown, shop personnel began an extensive study of each one to determine requirements for tools, jigs, fixtures, machine loadings, and methods of production. A welding procedure and sequence were set up for all weldments, including dictated preheating procedure and stress relieving cycle, since distortion had to be prevented and close tolerance machining dimensions maintained, despite the fact that light gauge steels were used for the most part. To carry out the precise welding operations, ingenious special jigs for fitting and welding had to be fabricated. Interesting examples include a fixture for turning a 23' radius on a planer machine, and another fixture for machining an 8' keyway in the cradle tube on the same planer.

Upon completion of these studies, it became apparent that subcontractors were needed to meet the delivery schedule, due to excessive machine loadings and intricate machining operations. Several capable subcontractors were located, and the "pool procurement" program again came into play, permitting all facilities to share in the subcontracting venture, thus realizing savings in time and money for the whole project.

Frequent meetings were held between engineers, purchasing agents, and production personnel of all organizations concerned. Each would

present his problems or ideas concerning procurement or production, and those were discussed and resolved. Some of the ideas conceived at these sessions resulted in improvements of design from a functional as well as manufacturing standpoint. When the conferences were convened at the arsenal, contractors' representatives had the opportunity to study production techniques used on the pilot model which was being made at that time.

By early fall of 1951, required tooling was being completed, and material was being expedited into the Dravo plant. Since this material was practically irreplaceable on short notice, precautionary measures had to be taken to prevent its diversion to other production jobs within the plant. A program was set up at warehouses, storage yards, and shops, for careful stencilling, tagging, and segregation of these materials from all other production materials. This project was processed through the shops concurrently with many other varied jobs. No special plant layout was deemed necessary to divorce this task from the normal run of work, although more and closer supervision was given the gun program and more skilled craftsmen were needed to produce the equipment. November 1951 found the structural and machine shops starting into the production of components for the atomic gun carriage and mount.

Before using any steel plate, and

during and after welding operations, a 100% inspection was conducted. All the careful study given to the program in its early stages was justified, for the tests revealed only a very small amount of defective welding.

All machined parts were required to pass through an inspection area manned by Dravo's own inspection staff and resident Ordnance inspectors, who provided valuable technical assistance. Parts were minutely inspected for compliance with drawing tolerances, which in many cases were within .001".

In May 1952 the atomic gun gradually came closer to being a reality as component parts were fitted together into subassemblies or individual mechanisms. The assembly continued to grow until July 1952, when the first production model was completed. Tests and trials which were feasible were conducted at the plant. Upon completion of these, the first production model was shipped by rail to the Aberdeen Proving Grounds for final acceptance and test firing.

It took approximately nine months from the Government's starting whistle on this defense contract until materials were available in the shops, and another nine months of production before the first carriage assembly was produced. Without coordinated effort and pool procurement, this schedule could never have been attained.



Acceptance test. The first shot is fired from the Army's new 280 mm. atomic cannon at the Aberdeen Proving Grounds.

# Modernize Public Purchasing Laws

By Mary E. O'Connor, Purchasing Agent, State of New York

ONE difference between commercial and public purchasing is that in the former field each individual unit or trade establishes its own policies and rules, whereas in government they are controlled by statute. In commercial and industrial circles, policies and procedures are constantly modernized to suit the needs of the trade and the trend of the times, whereas the modernization of governmental purchasing techniques is a slow, round-about process, hampered by iron-clad and frequently outmoded statutes, and often requiring legislative action.

## **Statute or Interpretation?**

Some progress has been made by the Federal Government and in a few states, but there has been little change in local purchase laws over the past several years. One result of this is a tendency on the part of some local officials to emulate procedures legalized in procurement for the Federal Government on a wartime, emergency status, even though they infringe on legality under their own laws in the process. While it is true that law is neither all black nor white, there can be costly disagreements over non-judicial, individual definitions of law and the shades of interpretation—and not alone in procurement.

Personal judgment can become the subject of debate, contention, and public criticism, and woe to the public official who is not in a position to defend himself against unfriendly publicity or political censure. One of the most ominous indications of trouble brewing over purchasing policies is the difference

of opinion between purchasing officials themselves as to what constitutes legal and ethical practice under similar statutes. Some argue that the discretionary power of public officials is all-inclusive, but the contention is loaded with dynamite.

The steady progress of purchasing science has brought about evaluation of the need for education, training and experience as a background for expert work in this field. Appropriate courses of study are being charted by trade and professional associations, governmental groups and agencies, and educational institutions. Change is in the air.

At the moment, questionnaires are in circulation, asking the pedantic questions "Do you do this?" or "Do you do that?" in the administration of your department. But on none of these questionnaires have I found the question: "Does the statute or ordinance under which you are working specifically authorize your procedures?" In evaluating and reporting the results of these questionnaires, there is the chance that custom may supersede legality and ethics in determining policy. The theory would seem to be: "If the other fellow can do it, I can too."

## **Time to Evaluate**

Governmental administration becomes more complex and costly as time goes on, and taxpayers are ever more aware that increased cost of government helps to increase taxes. The present "recession" may be a good time to re-examine trade conditions and the rules under which we work.

Fair trade laws and price maintenance policies have changed the

markets available to governmental buyers, who are forced more and more into secondary markets for their wares, at nearly uniform prices which are not truly competitive. Actually, it has been established that sometimes government pays a premium for a commodity purchased in the so-called competitive market on advertised bidding. While some state laws exempt governmental buying from the provisions of fair trade laws, even with this protection direct markets for supplies are on the wane, and the cost of commodities purchased is increased in proportion to the extra commissions and costs involved in each transaction, with the tax rate soaring accordingly.

But quite aside from the taxpayers' reaction, this is serious because governments operate on fixed budgets. The extra cost of one class of commodities reduced the funds available for the purchase of another, with resultant effects on production and employment. Even the standard of welfare of the wards of government may be lowered under depleted appropriations, if comforts cannot be provided for them and a decent standard of living and recreation for their attendants. There is not a branch of governmental administration that is not affected by efficiency—or lack of efficiency—in purchasing practice.

## **Some Specific Problems**

It would be impossible to discuss here the endless variety of problems that are peculiar to governmental buying, so only a few of them are highlighted. Among the most crucial is the plight of some local pur-

chasing agents who are so hamstrung by statutory regulations that they are powerless to transact their business with efficiency and dispatch. Some of them are so subject to dictation, supervision, delays, red tape, and routine that they might as well try to swim the English Channel, bound hand and foot, as to function efficiently under such handicaps. Their story is too long to relate here, but their problem does call for study and solution.

Perhaps one of the greatest complexities in centralized governmental purchasing, where central stores are either impractical or non-existent, is the purchase of small lots of individual inexpensive supplies commonly used, for distribution by the vendor over an extended territory. Whatever logical solutions to this situation are available, sometimes

the wrong one is invoked—one that involves prohibitive costs for shipping or double handling, or other unjustifiable expense; or, since the business is unattractive to wholesalers, centralized purchase may be made at prices that exceed the local cost of identical items.

A perennial problem for buyers is the application of routine rules of competitive bidding in the purchase of subscriptions, books and pamphlets, and copyrighted, patented, specialized scientific and technical equipment, components, parts, etc., on which it has been established (not merely concluded) that no competition is available.

There is no well defined terminology in governmental purchasing. Words have different meanings in different contexts or in respect to different commodities. The word "contract" is too broad; formal and informal contract procedure is not

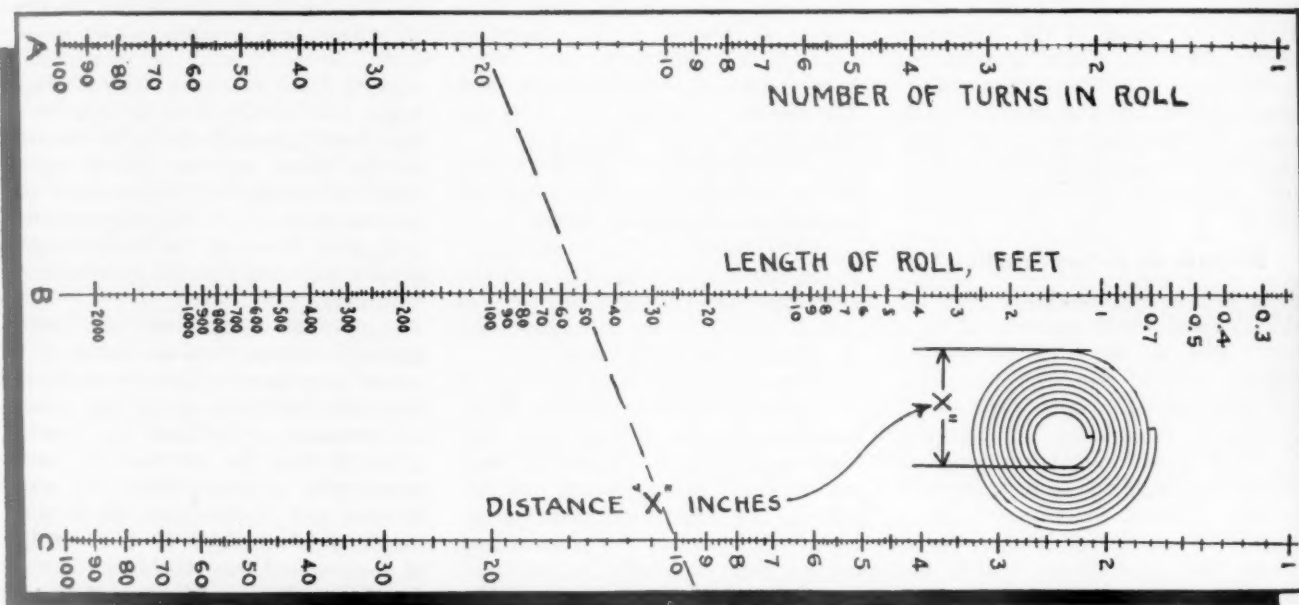
differentiated. "Requisitions" may mean estimates, or requirements lists to the central office or local stores, or orders to a vendor, to central stores, or on local stocks. Clarification and uniformity of these and many other ambiguous terms is needed to bring understanding between communities and agencies, and to vendors, buyers, and users alike.

#### Modernization Is Needed

In listing these difficulties, it would be most unfair to infer that purchasing agents generally are not doing a good job in spite of them. On the contrary, they are making an outstanding effort to meet modern, ethical business standards in their work in spite of limitations that do not apply to their contemporaries in commercial business. But in the process they sometimes

(Please turn to page 330)

## How Many Linear Feet in a Roll?



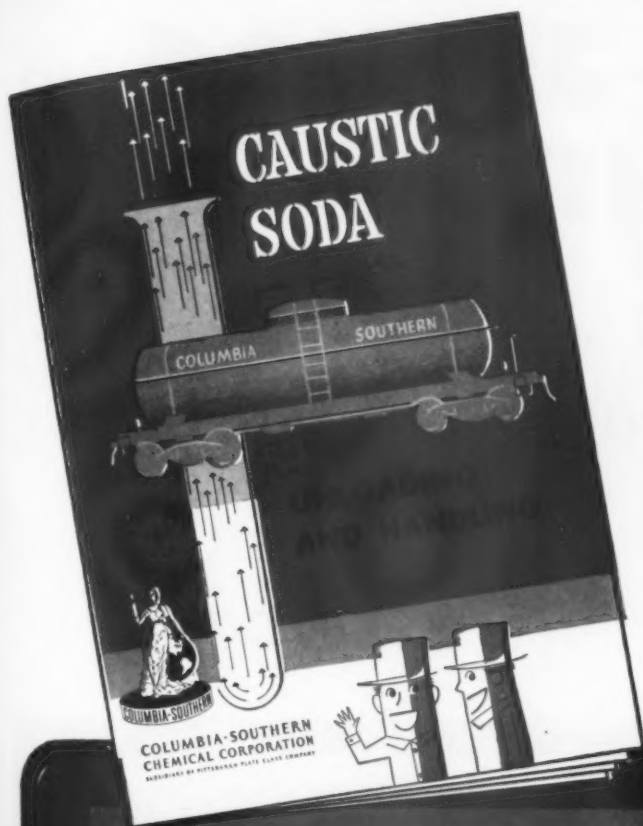
**B**Y special request, this chart is reprinted from our December 1948 issue. Many materials purchased and used in industry—such as belting, corrugated wrapping, insulation, wire netting, carpeting, sheet metal, etc.—come in the form of rolls. If bought by weight, receiving and invoice checking are simple. But in the use of these materials, and in balancing inventory against need, the number of feet per roll is the important thing.

This chart measures linear length of any roll material, with a direct reading. Tightness of the roll is not a factor, as the increased number of turns compensates for the smaller diameter. Only one measurement is needed, plus a count of the number of turns.

Distance "X" is measured in inches, exactly as shown. Note this factor on line "C" of chart. Now count the number of turns in the roll and note this factor on line "A". Lay a straight edge across the

chart, connecting these two points. The intersection of this line on the center scale (line "B") gives a direct reading of the length of the roll, in feet.

In the example shown, the problem was to find the number of feet in a roll of material having 20 turns, the distance "X" being 10 inches. A line is drawn from 20 on scale "A" to 10 on scale "C". The answer is found on scale "B", where the line crosses. Length of the roll is a little more than 52 feet.



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## When Seller Breaches Contract

By Leo T. Parker

**A** GENERAL question uppermost in the minds of many purchasers with whom I have talked is: "If a purchaser has good intentions when he signs a sale contract and proceeds to fulfill his obligations assumed in the contract, what are his legal rights against the seller who breaches the contract?"

Another purchaser asked: "Assuming both the buyer and seller to a sale contract honestly believe that they have complied with the exact terms of the contract, who may win the suit and who makes the decision?"

Modern higher courts consistently hold that if the seller commits a clear and positive breach of the contract, the purchaser may recover full sustained damages. If the purchaser has made any payments, he may recover the payments made on the contract, plus all sustained damages.

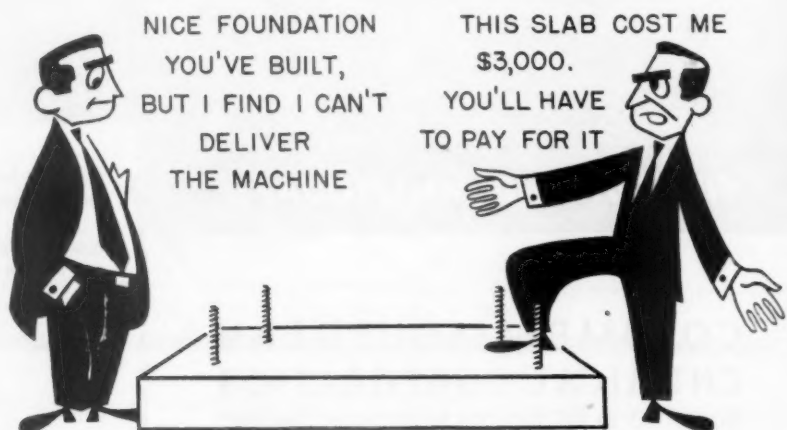
For example, in *Martin v. Terre*, 43 So. (2d) 925, the testimony showed facts as follows: One Martin made a verbal agreement whereby one Terre was to purchase from Martin a fishing boat for the agreed price of \$2,600—\$500 to be paid in cash and the balance to be paid from profits earned by Terre. After the purchase of this boat, and after Terre had started fishing operations, Martin and Terre had an argument and Martin took possession of the boat. At this time Martin believed that he had a legal right to repossess the boat.

In subsequent litigation the higher court held that Martin was the one

who breached the contract, and that he must return the \$500 down payment to Terre, saying:

"It seems that the deal was not called off by the defendant (Terre), but by the plaintiff (Martin) himself; in other words, the plaintiff himself revoked the sale made to the defendant, and under these circumstances, it is equitable to put the parties back in the same position that they were prior to the deal.

For comparison, see *L. Albert and Son*, 178 Fed. (2d) 183. Here it was shown a company constructed a foundation at the cost of \$3,000 for installation of machines it had ordered from a seller. The seller failed to make delivery of the machines and the higher court held that the purchaser could recover this \$3,000 from the seller, subject to the seller's privilege to deduct from that amount any sum which



Defendant is entitled to recover this amount, \$500.

The fact that Terre failed to assert and prove that he sustained any damages caused by Martin's breach, resulted in the court not allowing Terre any damages in addition to return of his \$500 down payment.

it could prove would have been the purchaser's loss, if the machines had been delivered. This court said:

"On principle, therefore, the proper solution would seem to be that the promisee (purchaser) may recover his outlay in preparation for the performance, subject to the privilege of the promisor (seller) to

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reduce it by as much as he can show that the promisee (purchaser) would have lost, if the contract had been performed."

Such a situation may never confront the average buyer, but the decision is illustrative of the law that when a seller breaches a sale contract the purchaser may recover his actual financial losses resulting from the breach, but the seller is privileged to prove any existing conditions that effectively reduce the purchaser's alleged damages.

#### As You Were

On the other hand, if the purchaser sustained no damages from the seller's breach, the court will replace the parties in the positions they had originally and before the contract was made. This law of course is applicable to breach by a seller of any clause in the sale contract, and more particularly a guarantee clause, as any breach by a seller is sufficient to justify the purchaser to rescind the contract. Hence, the courts consistently hold that when the testimony shows that a seller breached a guarantee, the purchaser may rescind the contract and demand return of the purchase money.

For example, in *Mahaney v. Perry Exchange*, 85 N. E. (2d) 558, it was

According to a late higher court decision, a seller who breaches a contract to deliver specified merchandise is liable in damages, which includes the loss of use of the merchandise by the buyer until he locates and purchases other merchandise exactly the same as was specified in the contract.

#### Extra Damages

For illustration, in *Richardson v. Lawler*, 231 Pac. (2d) 671, it was shown one Lawler deposited \$50 with a seller for specified merchandise. Later the seller refused to deliver the merchandise to Lawler, who sued for damages.

The higher court held the seller liable to Lawler for \$495 damages for loss of use of the merchandise for a period of 99 days, and return of the \$50 deposit with interest on the deposit from the date the contract was made.

#### Must Act Promptly

Sometimes, particularly if the purchaser fails to act in good faith, or if the seller makes an honest effort to please a buyer who claims breach of a contract, the court may unusually settle the differences between the contracting parties.

For illustration, in *Sparks v. Bose*,

and she relied upon his warranty. The dealer gave Bose a written contract warranting the car against defects in the material and workmanship for 90 days or 4000 miles, "whichever event shall occur first".

Bose introduced testimony to the effect that within two weeks after she bought the car the chrome came off the side, the transmission went bad, and she returned the car to the dealer and asked for her money back; and that the dealer persuaded her to give him an opportunity to make good on his warranty. Then the dealer repaired the car, but it was never satisfactory. Bose returned it to him again within 90 days and demanded her money, and he again repaired it and said he would make it operate. Again the repairs did not last and she tendered him the car, asked for her money back, and when he refused, she left the car at his garage. In other words, she left the car at the dealer's garage one year and three months after she purchased it. Therefore she had some use of the car for 15 months.

In view of the fact that the dealer's mechanics and employees verified Bose's allegation as to the unsatisfactory condition and service of the automobile, the jury awarded Bose \$1,000 damages, but held that she must keep the automobile. The lower court approved the verdict.

The dealer appealed to the higher court and argued that he could not be liable because the only warranty he gave on the car was the one in writing covering defective material and workmanship for 90 days or 4000 miles, and he had fully complied with the 4000 mile warranty by repairing the car and installing new parts every time it was brought to his garage during the 90 day period. But Bose testified every time she took the car to the dealer she demanded the dealer take the car back and return her money, and each time he promised to make the car operate efficiently. She was somewhat corroborated by the fact that the testimony showed that the dealer repaired the drive shaft free of charge some ten months after she purchased the car. Therefore, the higher court approved the lower court's verdict holding that the dealer was also liable on his verbal guarantee that the automobile would serve Bose's purposes. The court said:

"Appellant (dealer) insists that the only warranty upon which he could be liable is the one in writing, which covered the 90 day or 4000 mile period, and the evidence shows

IT SHOULDN'T HAVE TAKEN YOU A YEAR  
AND A HALF TO FIND OUT  
SURE, I DIDN'T PAY HIM.  
THE MACHINE WAS NO GOOD

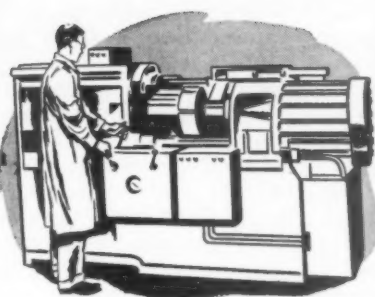


shown that a seller sold certain equipment and guaranteed that it would remain in good operating condition for 30 days. The equipment failed to operate satisfactorily for this period.

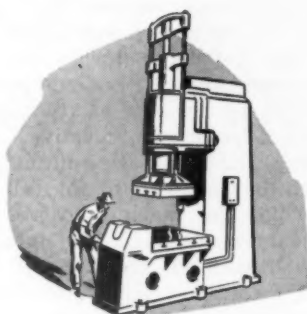
The higher court ordered the dealer to take back the equipment and refund the purchase price, saying:

"By reason of material misrepresentations and false warranties, the plaintiff (purchaser) is entitled to rescind the sale."

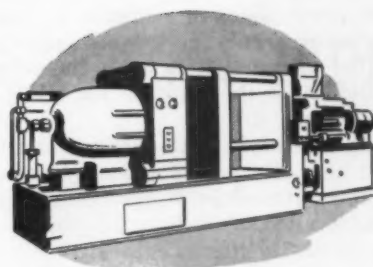
253 S. W. (2d) 245, it was shown that one Bose bought a new automobile from a dealer, for which she paid \$2,235 cash. In a subsequent suit against the dealer, Bose testified that she had informed the dealer she desired to use the car in her business and would be traveling the highways alone and wanted a reliable car which would serve her without unusual breakdowns. Bose claimed that to induce her to buy it, the dealer orally warranted the car would serve that purpose



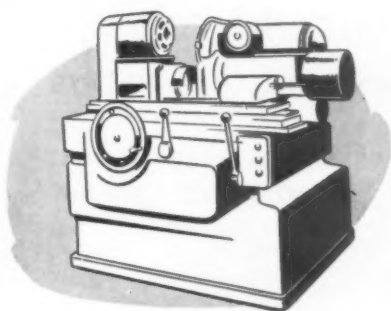
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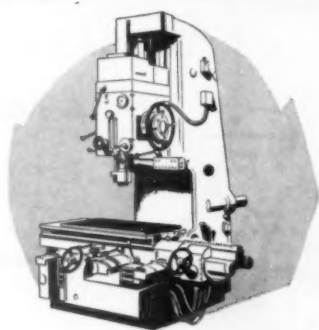
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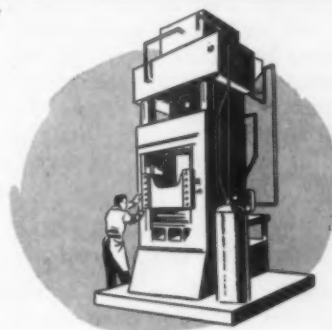
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he complied with it. We cannot agree. Appellee's (Bose's) pleading and proof show in addition to the written warranty, appellant (dealer) orally warranted to her the car would serve the purpose for which she bought it."

So, therefore, this higher court held that the oral guarantee given on the automobile was sufficient in consideration of the written guarantee to justify the purchaser receiving back as damages \$1,000 on the purchase price of the automobile. And, of course, the purchaser was not required to pay the dealer for the time and parts he had spent repairing the car. Actually, had the court not believed the purchaser's testimony regarding the seller's oral warranty, it is very probable that the purchaser would have been awarded no damages, as the seller had contrived to have the purchaser get 4000 miles use of the automobile.

#### **Purchaser Is Favored**

Generally speaking, the outcome of testimony of oral promises, agreements or guarantees made by a seller is uncertain. Yet it appears that in many suits of this nature the courts rely upon the purchaser's testimony.

For illustration, in *Martin v. Arnold*, 247 Pac. (2d) 517, it was shown that a seller sold a machine to one Omen, on the installment payment plan. After two years had elapsed, the seller sued Omen to gain possession of the machine, claiming that Omen had defaulted in making the agreed payments.

During the trial Omen testified that he had paid all the notes, but he had kept none of the receipts. Omen had his father, and other relatives, to testify that they had been with him when he made certain payments to the seller.

In view of this testimony, the higher court decided that Omen could take possession of and ownership to the machine without making further payments to the seller.

Nevertheless, purchasers will not always be satisfied with a verdict when relying upon the court to believe his oral testimony.

For example, in *Capella v. Taulli*, 53 So. (2d) 271, the testimony showed facts as follows: A seller sold a purchaser a Fifty Inch Flat-work Ironer for the sum of \$1,248.30, \$300 of which was paid in cash and the balance of \$948.30 was secured by promissory note and chattel mortgage. After 17 months the seller sued the purchaser for the balance due, amounting to \$948.30, plus interest.

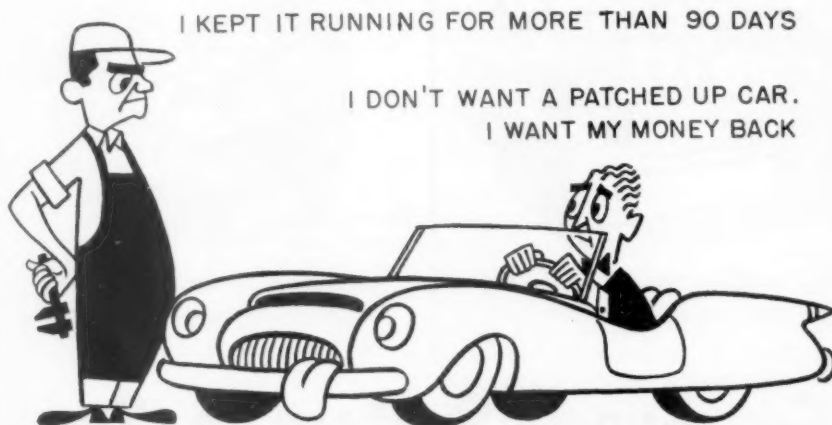
The testimony showed that although the purchaser had failed to make any payments during the 17 months period, yet he had not complained to the dealer that the ironer was unsatisfactory or defective.

During the trial the purchaser testified that his reason for failing to pay for the machine was that "the heat is not sufficient enough to dry sheets and they have to be passed through machine at least three or four times before they are dry." Also the purchaser testified that the seller had orally misrepresented the number of towels and sheets the machine would turn out per hour.

For example, in *Red v. Petty Company*, 242 Pac. (2d) 302, the testimony showed facts as follows: A buyer bought a used truck under a written contract which contained a clause to the effect that the seller gave no "representations or warranties expressed or implied" on the truck. Within a few days after taking delivery, the truck would not operate. The buyer sued the seller.

Although the buyer testified that he seller had verbally guaranteed the truck, the higher court held the seller not liable saying:

"Where a written contract provides that there was no warranty,



Notwithstanding this testimony the higher court ordered the purchaser to pay the full balance due on the machine. The court said:

"Defendants for the first time, which was seventeen months after the sale, set up the defense that before purchasing the ironer, plaintiff (dealer) represented to them that this machine would turn out 70 to 100 finished huck towels or 70 to 100 finished sheets per hour."

Also, this higher court held that a buyer may not avoid paying for purchased merchandise unless he proves positively that the subject of the sale contained defects unknown to the buyer when the sale contract was signed. In this respect the higher court said:

"The burden of proof is on the vendee to establish that the defect existed before the sale to him."

#### **Verbal vs. Written**

According to a late higher court decision, an oral or verbal guarantee has no legal effect when a written contract between the buyer and seller states that there are no warranties on the merchandise.

"The furnace was inadequate to

the buyer could not predicate a defense on an oral contract."

#### **Cannot Retain Merchandise**

Another important point of law is that a purchaser cannot retain possession of merchandise and recover the full contract price from a seller who breached his contract.

For illustration, in *F. M. Cooley Company v. Stoeffler*, 92 N. E. (2d) 926, the testimony showed facts, as follows: The Cooley Company made a contract with a property owner named Stoeffler to furnish and install a furnace and a 275 gallon oil tank. When the job was completed, Stoeffler refused to pay the contract price, claiming that the company substituted a furnace too small and grossly inadequate and inefficient to properly heat the house. Stoeffler sued the company for damages and rescission of the contract. However, Stoeffler did permit the company to take possession of the furnace from the residence. The higher court held that Stoeffler could not rescind the contract, and must pay the full contract price, saying:

"The furnace was inadequate to

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meet the appellant's (company's) heat guaranty, but it was new when installed and the product of a reputable manufacturer. There is no evidence that it was defective or that it failed for any other reason than that it was too small for the task it was sold to perform. The common experience of mankind compels us to conclude that it not only had value to the appellant (company), who is a dealer in heating equipment, but also it had intrinsic value to anyone."

On the other hand, if the purchaser offers to allow the seller to regain possession of merchandise, on which the seller breached the sale contract, the purchaser may recover back the full contract price plus all resultant damages. In such a case the only testimony that will assist a manufacturer or other seller to win the suit is evidence that will convince a jury that the product was not defective when delivered to the purchaser or user. The fact that the seller did not guarantee the subject of the sale is of little consequence, because if the purchaser proves that it was defective the court will hold the seller liable on an implied guarantee that the merchandise is reasonably worth the purchase price, and free from hidden and dangerous defects.

In other words, testimony that will assist the seller to win the suit must convince the jury that the equipment or merchandise was not defective nor unusually dangerous when it was delivered to the purchaser. Then the jury may conclude that negligence of the purchaser caused the injury, and relieve the seller from damage liability.

#### Must Prove Defect

For example, in *Sanders v. Reed*, 54 S. E. (2d) 482, the testimony showed facts, as follows: A woman went to a store and looked at some stoves. She did not want a stove for heating water, and knew nothing about water connections on stoves used for heating water. The seller did not tell her, so she testified, that the stove she purchased was a stove for heating water, but told her it was a plain heater. She purchased the stove and it was delivered to her home by employees of the seller. The purchaser put two legs on the stove, installed a pipe oven, and connected the pipe to the flue. No water connections were made.

The woman started a fire in the heater. After the fire began to get hot the stove exploded. It was broken into numerous pieces, and

a piece of metal hit her, causing serious injuries. Further testimony showed that the stove was a laundry heater with a water jacket.

The jury decided that the injured woman could not recover damages from the seller because no proof was given that at the time the stove was delivered it was plugged to prevent escape of water and steam. The higher court approved the verdict, saying:

"The plaintiff's case was predicated entirely on the theory that the water jacket was plugged at the time it was sold and delivered to her; and that when a fire was started in the stove, steam was generated in the jacket, causing the stove to explode. These questions of fact were for the jury to determine from a consideration of all the evidence, and they were resolved in favor of the defendant (seller)."

Hence, this seller won a favorable verdict simply because he convinced the jury that the stove was not defective and contained no plugs when it was delivered to the purchaser, which implied that the purchaser who installed the stove inserted the plugs.

Of course this purchaser may have won a favorable verdict had she proved that the seller installed the stove, or had she proved that the stove was plugged when delivered to her to prevent escape of steam.

Very often the higher court awards punitive damages, in addition to normal damages, to a purchaser who is defrauded or otherwise unreasonably imposed on by a dealer.

#### Punitive Damages for Fraud

For example, in *Ader Company v. Zimmer*, 71 S. E. (2d) 270, it was shown that a dealer sold to one Zimmer a 1948 model machine which was in fact verbally represented by the dealer to be a 1949 model. The bill of sale stated that it was a 1949 model.

In subsequent litigation, although the actual difference in the trade-in value of the 1948 and 1949 models was only \$200, the higher court awarded Zimmer \$1,000 damages, saying that punitive damages were justified.

Also, a late higher court held that the seller of an automobile, whose speedometer was set back, is liable to the buyer not only for ordinary damages but also for exemplary or punitive damages.

For example in *District Motor v. Rod*, 88 Atl. (2d) 489, it was shown that one Rod purchased an automobile whose speedometer registered 50 miles. Later, Rod learned that the speedometer had been "set back".

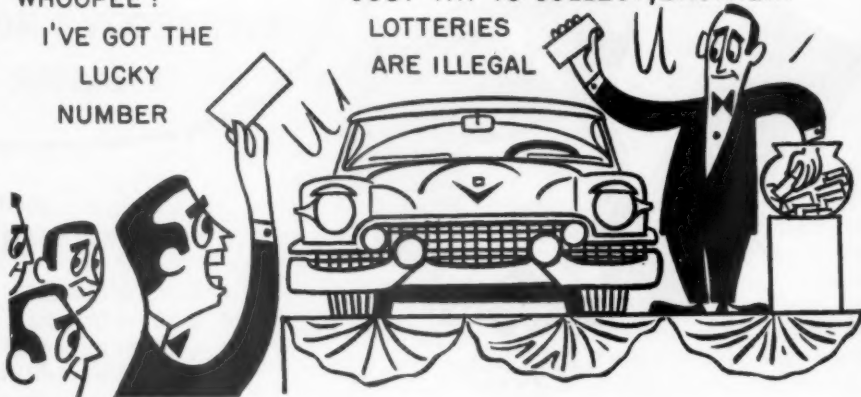
In subsequent litigation the higher court held that Rod could recover from the seller all ordinary damages

WHOOPEE !

I'VE GOT THE  
LUCKY  
NUMBER

JUST TRY TO COLLECT, BROTHER.

LOTTERIES  
ARE ILLEGAL



If a seller breaches a sale contract the purchaser has three definite actions or courses he can take. First, he can keep defective merchandise and recover from the seller full sustained financial losses, and damages; second, he can return the defective merchandise and recover the full contract price, plus damages; third, he can sue and compel the seller to fulfill the exact terms of the contract.

he incurred, plus \$400 exemplary damages. The court said:

"A buyer is entitled to rely on a speedometer reading."

These are two very recent higher court decisions which illustrate circumstances under which a purchaser may recover from a seller punitive damages in addition to actual or normal damages. Generally speaking, the courts award punitive dam-

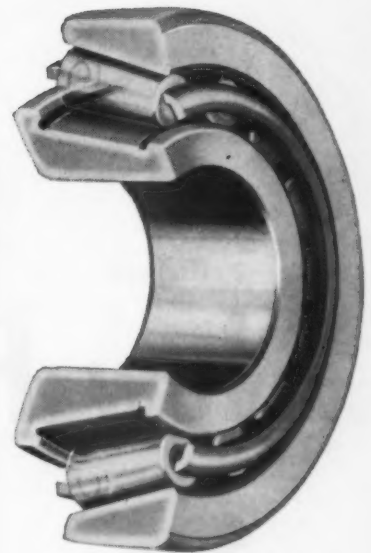
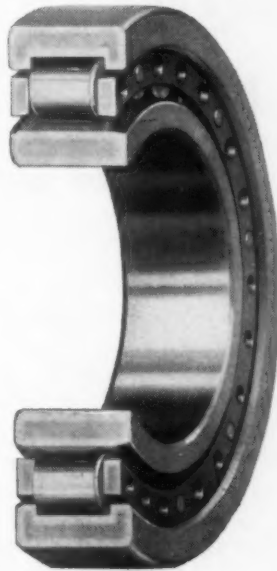
(Please turn to page 340)

WHATEVER YOUR ROLLER  
BEARING APPLICATION

# specify BOWER!

Earthmovers, jet turbine engines, rolling mill equipment, truck axles—you name it! Bower builds a complete line of tapered, straight and journal roller bearings including a size and type to fit *your* product. What's more, these dependable bearings have *proved* themselves in virtually every conceivable type of application. Their built-in quality, skillful engineering and advanced design features provide such important bearing advantages as reduced wear, longer life and lower maintenance requirements. Let a Bower engineer give you full details on the complete Bower line.

BOWER ROLLER BEARING COMPANY  
DETROIT 14, MICHIGAN

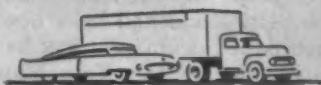


**BOWER TAPERED ROLLER BEARINGS INCORPORATE ADVANCED SPHERO-HONED DESIGN!** Spherically generated roll heads and higher flange with larger, two-zone contact area reduce wear, improve roller alignment and virtually eliminate "end play." This helps hold adjustment and pre-load longer and better. Larger oil groove provides positive lubrication.

**BOWER STRAIGHT ROLLER BEARINGS ARE BUILT TO CARRY MAXIMUM LOADS!** Integral two-lip race increases rigidity—keeps rollers in proper alignment at all times. Steel cage allows free movement of rollers between races during normal operation. High-grade alloy-steel rollers and races are precision-ground for quieter, smoother operation.

A COMPLETE LINE OF TAPERED, STRAIGHT AND JOURNAL ROLLER BEARINGS  
for every field of transportation and industry

**AUTOMOTIVE**



**RAILROAD**



**FARM**



**AIRCRAFT**



**EARTHMOVING**



**INDUSTRIAL**



# BOWER

ROLLER BEARINGS

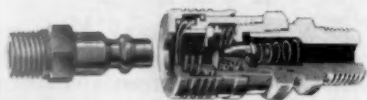


For More Information Circle No. 162 on Inquiry Card—Page 17

# New Products Ideas



## Detachable Coupler for Reciprocating Air Tools



An automatic, quick detachable coupler, identified as the Foster-matic, and recommended for air reciprocating tools is available. The coupler cannot be hammered to pieces by air tools nor will it fall or blow apart. While the coupler holds tighter, it still swivels freely. The half moon "dogs" on it offer long bands of gripping contact. The dogs lock, steel against steel, at 45 degrees, and are positioned by a floating steel carrier. This eliminates the usual metal wear and failure in quick detachable couplings. Actual tests have shown that the coupler delivers much greater air capacity. It can be attached to the tool without use of lead hoses. Further details may be had from Foster Mfg. Co., 2830 Gravois, St. Louis 18, Mo. Circle No. 39 on Inquiry Card—Page 17

## Bantam Size Hydraulic Bench Press Gives 5 Tons of Pressure

A bantam size, air-oil combination hydraulic bench press capable of delivering five tons of pressure

when connected to a 100 psi air line has been developed by the Alliance Mfg. Co., Alliance, Ohio. Termed the model 500 "Pnu-draulic," it weighs only 300 lb and can be easily moved from place to place by two men. It can be attached to any convenient shop air line. It has no motor and uses no electric power, pumps or cooling water. An air



filter protects the unit from damage caused by pipe scale and dirt in the air line. The powerful ram thrust of the press makes it a versatile piece of equipment, capable of doing many jobs. It is especially suited for staking, riveting, forming, piercing, crimping, sealing, broaching, trimming and flanging.

Circle No. 40 on Inquiry Card—Page 17

## New Handler Increases Fork Truck Versatility



Fork truck versatility is increased and the scope of the truck's handling activities widened by a newly designed pallet, drum, and box handler according to the Yale Materials Handling Division, The Yale & Towne Manufacturing Co., Philadelphia, Pa. Lever controls enable operator to vary fork truck spread hydraulically between 18" minimum and 62" maximum centers. This arrangement makes possible the handling of a wide variety of pallet sizes. Many different load types may also be handled because of the squeeze action of the versatile design feature. Special purpose jaws can be secured to the forks to handle carton loads within the range of the fork spread. For drum handling, a simple on-the-job drum clamp attachment is slipped on the forks and locked into position.

Circle No. 41 on Inquiry Card—Page 17



UNBRAKO button head socket screws are used exclusively to assemble this controlled volume pump, which was designed to fill the growing industrial need for the pumping of an allotted quantity of liquid at higher pressures, higher capacities.



The assembler inserts the UNBRAKO button head socket screw with his fingers, and runs it down as far as he can.



He then tightens it with a standard UNBRAKO key. Once seated, the low head design of the UNBRAKO button head provides a smooth, streamlined appearance.



UNBRAKO Button Head Socket Screws are made of heat treated alloy steel; have fully formed threads, Class 3 fit; are available in standard sizes from # 8 to  $\frac{3}{4}$ ". Accurate hex socket provides nonslip drive, prevents marring or mutilation of the head.

## Save inventory dollars

### Use UNBRAKO Standards—stocked by your distributor

Not only does your UNBRAKO distributor lower inventory investment, he also saves you time—and provides latest information about products, cost-saving methods, production techniques, current problems, trade practices. For latest data on UNBRAKO standard socket screw products, consult him or write STANDARD PRESSED STEEL COMPANY, Jenkintown 31, Pennsylvania.

See us at Booth 1539, Convention Hall, Philadelphia, Pa., during the A.S.T.E. Show, April 26 to 30.



SOCKET SCREW DIVISION



JENKINTOWN PENNSYLVANIA



Self-Locking Set Screw

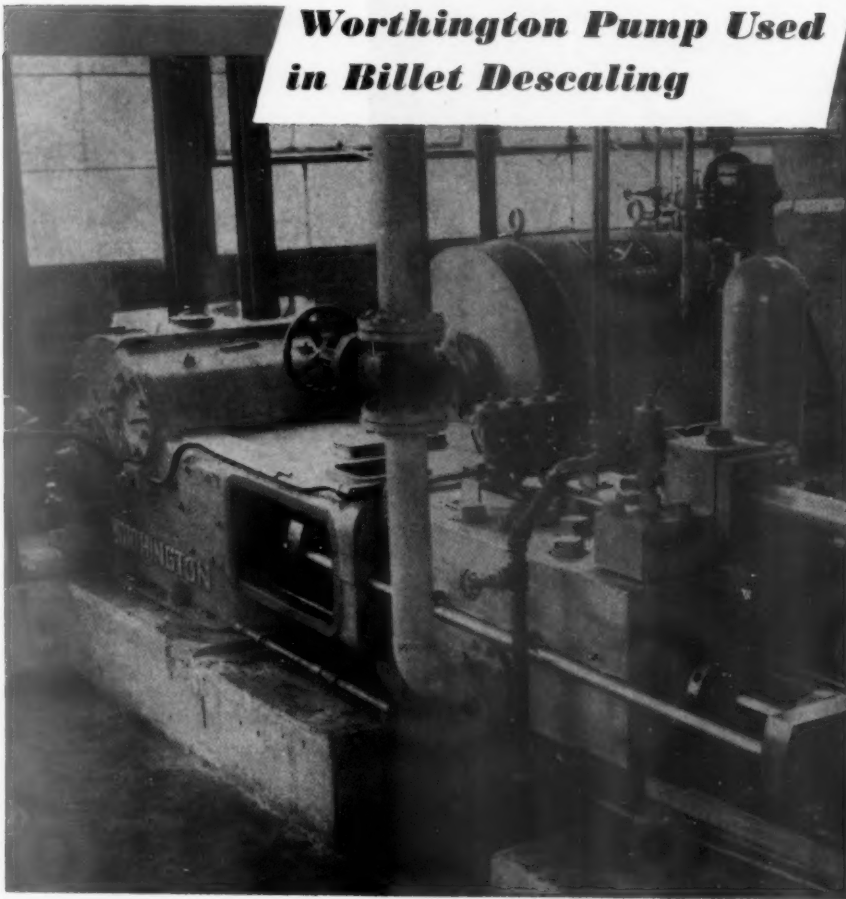
Flat Head Cap Screw

Shoulder Screw

Dowel Pin

Knurled Head Cap Screw

## Worthington Pump Used in Billet Descaling



### is powered by **Star-Kimble Motor**

This Worthington 2 3/4" by 12" plunger pump, shown installed at the South Bend Plant of the Oliver Corporation, produces the air pressure needed to force water through the nozzles of a Worthington descaling system. Billets are fed into the descaling cabinet at the rate of 125 an hour. To maintain uninterrupted production flow at this rate of descaling calls for an unfailing supply of water to the nozzles of 110 gpm at 2,500 psi. To power the pump for this service, Worthington selected a Star-Kimble squirrel-cage motor.

#### IN ADDITION

Star-Kimble designs and builds special and standard motors—squirrel-cage, wound rotor and d-c types—to meet specific requirements in all major industrial fields of motor application, including machine tools, marine, materials handling and processing equipment.

For information on standard squirrel-cage motors, write for Bulletin B-201.

Standard and special motors of all types, 1 to 125 hp; generators and motor-generator sets, 1 to 100 kw; Marine motors 1/2 to 125 hp.



## Star-Kimble

**MOTOR DIVISION**

of Miehle Printing Press and Mfg. Co.

213 Bloomfield Avenue

Bloomfield, New Jersey

For More Information Circle No. 164 on Inquiry Card—Page 17

## Corrosion-Resistant Rollpin

Its improved AISI 420 corrosion resistant steel Rollpin is capable of withstanding a 100 hour salt spray test, says Elastic Stop Nut Corp., of America, Union, N.J. New processing methods, including passivation, enable it to meet the requirements of AMS 7207. Easy visual identification is provided by a silver grey finish to distinguish it from the heat-treated carbon steel Rollpin which is of blue steel color. The Rollpin is a slotted and chamfered cylindrical spring pin, heat-treated to achieve optimum toughness, resilience and shear strength. The design proportions are so engineered that the self-locking action is achieved in holes drilled to normal production tolerances.

Circle No. 42 on Inquiry Card—Page 17

## Dynel Work Clothes Cut Costs, Last 35% Longer

Chem-Wear Inc., Darien, Conn., states that work clothes made out of a melton fabric, containing 25% Dynel and 75% reprocessed wool, have an increased life expectancy of 35% to 40% compared with garments made with natural fibers alone. Designed originally for iron and steel furnace tenders, the clothing promises to reduce heavy-duty garment costs for men working under any conditions that require protection from either heat or cold. The fabric is available in a weight of 20 oz per sq yd. Strength tests show that the fabric averages 10% to 15% stronger than all-wool of the same weight and that it has at least 40% higher tear strength.

Circle No. 43 on Inquiry Card—Page 17

## Magnetic Positioning Tool

A new, completely universal, holding fixture for production and welding operations has been announced by the Standard Portable Cord Co., Inc. of Jamestown, New York.

Called the "Magic Positioner", this holding device consists of three 45 pound pull, neoprene covered, Alnico V, guaranteed permanent magnets. The magnets are held in a die-cast, high tensile aluminum frame and have full 360° adjustment, which is regulated by a scale showing 5° graduations.

When positioned, each magnet can be locked in place. This feature provides for positioning the tool to conform to almost every conceivable welding operation, and the holding of almost every shape or design of metal.

Circle No. 44 on Inquiry Card—Page 17

For More Information Circle No. 166 on Inquiry Card—Page 17→

# Whatever you need in solders and fluxes...



...get it from

## National Lead Company

If your metal joining, sealing or filling operations call for solder and flux, you're sure to find what you need in National Lead's "open end" line.

You can pick from a list of stock items that would fill this page . . . but that's not all. With unsurpassed research, testing and production facilities, we are set up to solve practically any problem that involves fluxing and soldering.

Supplying every form of solder from pigs to powder is standard practice.

Furnishing every practical formula of solder from one end of the tin-lead scale to the other, and with other metal additives where needed, is routine.

Compounding fluxes for every conceivable pre-

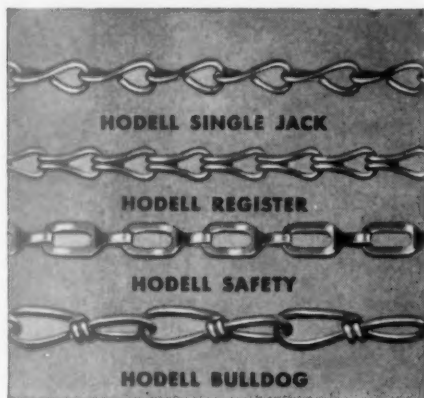
soldering purpose is all in the day's work.

Put your metal joining, sealing and filling problems up to "National." Our chemical and metallurgical engineers are at your service. Get in touch with nearest office.

### NATIONAL LEAD COMPANY

General Offices: 111 Broadway, New York 6, New York  
Atlanta • Baltimore • Buffalo • Chicago • Cincinnati  
Cleveland • Dallas • Detroit • Kansas City  
Milwaukee • New Orleans • Omaha • Philadelphia  
Pittsburgh • St. Louis • St. Paul  
Boston: National Lead Co. of Mass.; Pacific  
Coast: Morris P. Kirk & Son, Inc., Los Angeles, Emeryville (Calif.), Phoenix, Portland, Salt Lake City, Seattle; Canada: Canada Metal Co., Ltd., Montreal, Toronto, Vancouver, Winnipeg.



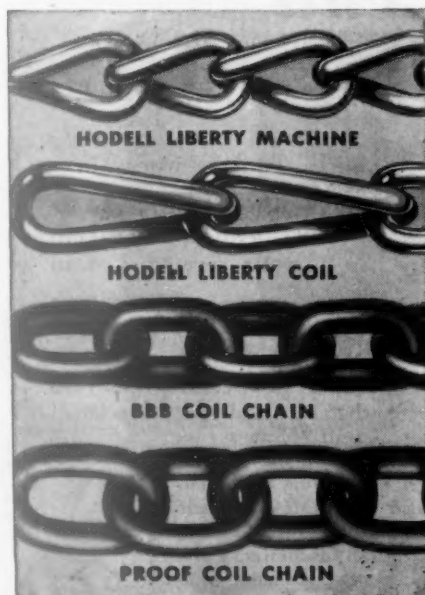


# HODELL WELDED AND WELDLESS CHAIN

*for every purpose*

When you buy chain... be sure to buy from the quality line of Hodell Chain that includes types and sizes for every industrial use. Hodell also manufactures many formed wire specialties and can make chain assemblies to your specifications. Hodell welcomes the opportunity to quote on your requirements. Write for the Hodell Chain catalog, giving complete information.

**HODELL CHAIN COMPANY**  
Cleveland 3, Ohio  
Div. of The National Screw & Mfg. Co.



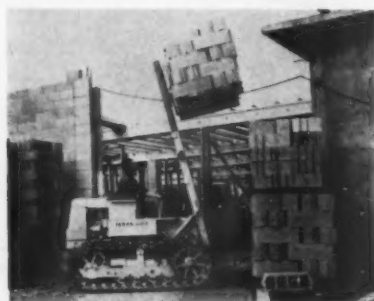
For More Information Circle No. 169  
on Inquiry Card—Page 17

## Vertical Toolholder Cuts Carbide Waste, Grinding

Vascoloy-Ramet Corp., Waukegan, Ill., has a new vertical toolholder that cuts carbide waste and eliminates chipbreaker grinding. The "built in" carbide chipbreaker provides correct chip formation over wide cutting range for single chipbreaker width and eliminates expensive chipbreaker grinding of inserts. The mechanical type chipbreaker results in lower chip pressure and, therefore reduces horsepower, tool wear and heat. A second important feature of the toolholder is that the method of holding the carbide insert permits using of all the carbide insert. To sharpen the inserts, it is only necessary to surface grind the ends.

Circle No. 45 on Inquiry Card—Page 17

## Multi-Purpose Fork Lift Truck



American Tractor Corp., Churubusco, Ind., say that their off-the-road multi-purpose fork lift truck is unusually versatile. The truck, Terra-Lift M3, can be converted within 10 min from a 3000 lb capacity fork lift truck into a 3/4 yard bucket loader, 6' angling dozer, or towing tractor of 30 drawbar hp. It handles materials in deep mud, sand or snow, and achieves excellent traction on glaring ice. For indoor and outdoor use, the fork lift truck is equipped with hard rubber shoes and operates easily over oil-soaked floors, silicon sand, or steel scrap in mills, foundries and manufacturing plants. Available with 9' or 12' lifting mast, it is capable of elevating materials to second story height.

Circle No. 46 on Inquiry Card—Page 17

## Deadman Valve Insures Safety Control in Sandblasting Work

All types of sandblasting machines can instantly control blasting at nozzle head with a "Recova" remote control deadman valve. It reduces manpower and material costs by 20-40% and insures complete on-the-job safety. Blasting is started by depressing a hand valve. To

(Please turn to page 134)

# CHECK YOUR MOTOR NEEDS...

New G-E **TRI 55 CLAD**

*motors are now available  
in these ratings!*

## TRI/CLAD '55' DRIPPROOF MOTORS

HP	Frame	Ratings
1/2	K182	244-3-60 8P
3/4	K182	244-3-60 6P
3/4	K184	244-3-60 8P
1	K182	244-3-60 4P
1	K182	208-3-60 4P
1	K182	550-3-60 4P
1	K184	244-3-60 6P
1 1/2	K182	244-3-60 2P
1 1/2	K184	244-3-60 4P
1 1/2	K184	208-3-60 4P
1 1/2	K184	550-3-60 4P
1 1/2	K184	244-3-60 6P
2	K182	244-3-60 2P
2	K184	244-3-60 4P
2	K184	208-3-60 4P
2	K184	550-3-60 4P
3	K184	244-3-60 2P

## TRI/CLAD '55' ENCLOSED MOTORS

HP	Frame	Ratings
3/4	K182	244-3-60 6P
3/4	K184	244-3-60 8P
1	K182	244-3-60 4P
1	K184	244-3-60 6P
1 1/2	K182	244-3-60 2P
1 1/2	K184	244-3-60 4P
1 1/2	K184	244-3-60 6P
2	K184	244-3-60 2P
2	K184	244-3-60 4P
3	K184	244-3-60 2P

**ALL OTHER RATINGS AND SIZES  
AVAILABLE IN PREVIOUS DESIGN**

If you wish the G-E Tri-Clad motor in the original design, they are still available... in sizes and ratings listed above and in ratings to 2000 hp.

To get even more recent availability information on new Tri-Clad '55' standard and special motors, contact your nearest G.E. Apparatus Sales Office or G.E. motor supplier. General Electric Company, Schenectady 5, New York.

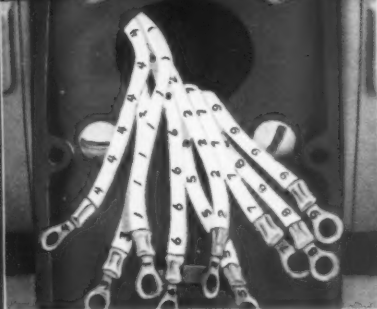
648-37

**GENERAL  ELECTRIC**

For More Information Circle No. 170  
on Inquiry Card—Page 17→  
PURCHASING

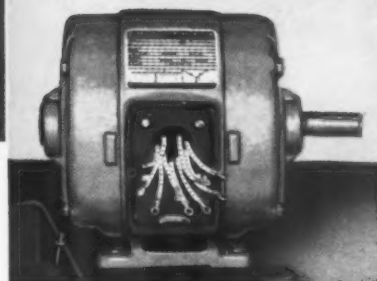
**TRI 55 CLAD** THE LEADER IN MODERN MOTOR DESIGN

**PERMA-NUMBERED LEADS**



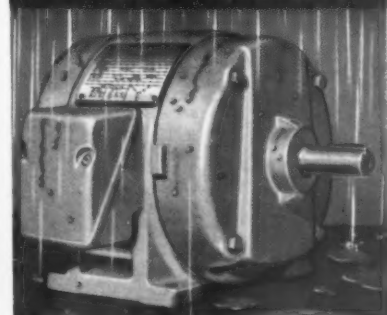
**EASIER TO SERVICE**, clipped or taped terminals always can be read. You save hooking-up time.

**EASY ACCESS CONDUIT BOX**



**LARGE CONDUIT BOX** is diagonally split—gives you ample knuckle room for easier wiring.

**60% MORE PROTECTION**



**MORE FULLY PROTECTED** motor achieved through redesign of cast iron frame and end shields.

**LONGER MOTOR LIFE**



**NEW BEARING SYSTEM** means the G-E motor runs longer without relubrication than any other.



Now, easier installation, less maintenance...

# G.E.'s new **TRI 55 CLAD** motor— you can install it and forget it!

The all-new General Electric Tri/Clad '55' motor is specially engineered to reduce your installation costs... and run longer, without attention, than ordinary motors. This new motor gives you 60% more physical protection plus longer electrical life. In addition, a bearing system designed to use the most modern greases means you will not have to re-grease the Tri/Clad '55' for years.

You save with the new Tri/Clad '55' because wiring is easier and faster. The large, diagonally split conduit box gives you plenty of knuckle room. Leads are perma-numbered... you can always identify them instantly.

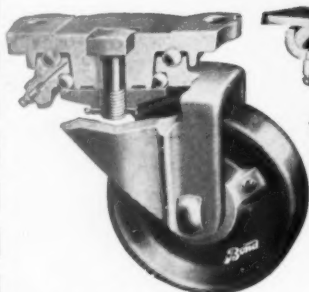
The new Tri/Clad '55' also brings you important handling, storing and installing economies. Better use of space within the frame means a 30% reduction in size and weight in some ratings. Yet active materials (magnetic steel and copper) are not sacrificed.

General Electric Tri/Clad '55' motors are now available in many ratings. The complete line of 1 to 30 hp a-c motors will be available soon. For full details contact your G-E Apparatus Sales Office or G-E Motor Supplier today. Write for Tri/Clad '55' bulletins GEA-6013—Dripproof motors, GEA-6012—Enclosed motors, GEA-6027—Gear-motors. General Electric Company, Section 648-7, Schenectady 5, N. Y.

*Progress is our most important product*

**GENERAL  ELECTRIC**

# These **Bond** Casters are Your Best Buys for TROUBLE-FREE SERVICE



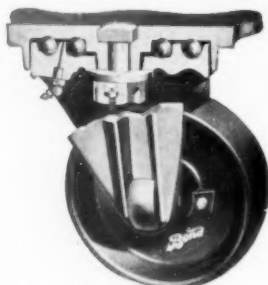
36-A Series—Double  
Ball Race Swivel Caster



40-A Series—Double  
Ball Race Structural Steel  
Swivel Caster



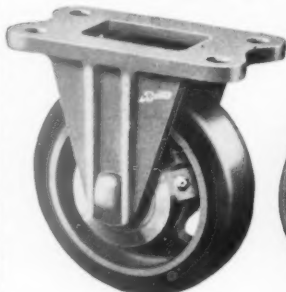
41-A Series—Structural  
Steel Stationary Caster



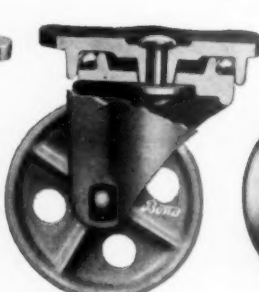
23-A Series—Double  
Ball Race Swivel Caster



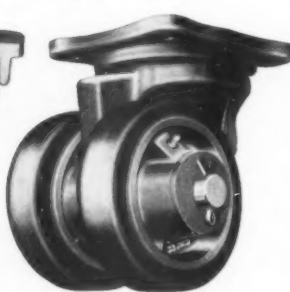
14-A Series—Tongue  
Swivel Caster



1-A Series—Stationary  
Caster



3-A Series—Single Ball  
Race Swivel Caster



Dual Wheel Swivel  
Caster

**Ask your industrial distributor...**

**he knows** that for dependability, economy and trouble-free materials handling you just can't beat Bond Casters.

Yes... your best buy is Bond and your own distributor is the man to see for the right Bond Casters for your jobs. Get your copy of Bond Catalog K-38 from him, or write direct.

**BOND FOUNDRY & MACHINE COMPANY**  
Manheim, Pennsylvania

For More Information Circle No. 171 on Inquiry Card—Page 17

(Continued from page 132)

stop, the operator releases hand valve. The resulting pressure drop opens bleed-off valve in less than two seconds, completely releasing all pressure. Air intake valve, through which the pot is charged, is simultaneously closed in order that no pressure may enter. If the operator should accidentally drop nozzle, "deadman" feature of hand valve instantly stops the machine. It is made by Clementina, Ltd., 2277 Jerrold Ave., San Francisco, Calif. Circle No. 47 on Inquiry Card—Page 17

## Magnetic Positioning Tool Aids Welding Operations



A magnetic positioning tool for welders is announced by the Standard Portable Cord Co., Inc., Jamestown, N. Y. The holding device consists of three 45 lb pull, neoprene covered, Alnico V, guaranteed permanent magnets. These are held in a die cast, high tensile aluminum frame and have full 360° adjustment which is regulated by a scale showing 5° graduations. When positioned, each magnet can be locked in place. This provides for positioning the tool to conform to almost every welding position, and the holding of almost every design of metal.

Circle No. 48 on Inquiry Card—Page 17

## Internal Burring Machine

A new type internal burring machine, described as model No. 388 is on the market. It is designed for chamfering the involute contour of internal spline and gear teeth, either straight or helical around their full form. Production rate depends upon the diameter and pitch of the gear teeth but is said to be up to and including 300 teeth per min. It is a universal machine tool and can be changed over from one type of gear to another in less than thirty minutes. Additional information may be had by writing: The Sheffield Corporation, Dayton 1, Ohio.

Circle No. 49 on Inquiry Card—Page 17



## A house for tomorrow

When Bill Miller first talked to the architect about his new home he stressed his desire to put into it the soundest materials and the newest conveniences.

"I hope my grandchildren will be happy in this house," he explained. "New improvements come fast these days, so let's try to be a few years ahead in our planning."

"What fuel would you like to use?" asked the architect when the discussion reached the heating plant.

"I would prefer to use coal," answered Bill, "I understand it is the most economical fuel here, as it is in most areas. But I don't want my wife

to be a furnace-tender."

"With a modern, bin-feed stoker with thermostatic control," said the architect, "your heating will be completely automatic, as well as clean and convenient. And coal has some big advantages — it gives a steady heat, not an off-again-on-again heat. Then there's this for the fellow who looks ahead: I don't know how long these other fuels are going to last. Every year they have to drill their wells deeper, and we are becoming more and more dependent on foreign supplies. As these other fuels get scarcer, they are going to get even more expensive.

"But coal is another story. There is plenty of coal right here in the United States to last us for hundreds—maybe thousands of years. That's something to think about when you're planning a house with the hope that your grandchildren will still be living in it."



**Chesapeake and Ohio  
Railway**

### Bring your fuel problems to C&O

As the world's largest carrier of bituminous coal, the C&O is intimately familiar with every phase of coal use. We have a large staff of experts who will gladly help you to locate the coal best suited to your needs; to help you use it most efficiently; to help get it to you promptly.

Write to:  
Coal Traffic Department  
Chesapeake and Ohio Railway  
2117 Terminal Tower  
Cleveland 1, Ohio

the A-B-C of M-S-T

**A** ALWAYS  
MAKES  
POSSIBLE  
**B** BETTER  
PRODUCTS  
**C** AT LOWER  
COST



# Michigan Electric Resistance WELDED STEEL TUBING

A  
Quality  
Product



## Muffler Inlet Pipe

## ROUND 3/8" to 4" O. D. 8 to 22 gauge SQUARE-RECTANGULAR 1/2" to 2" O. D. 20 gauge 1" to 2 3/4", 14, 16, 18 gauge

Carbon 1010 to 1025

### Michigan Tubing

has uniform strength, weight, ductility, I. D. and O. D., wall thickness, machinability, and weldability. It can be flanged, expanded, tapered, swaged, beaded, upset, flattened, forged, spun closed, fluted, and rolled. Available in a wide range of sizes, shapes and wall thicknesses, prefabricated by Michigan or formed and machined in your own plant.

This is an excellent example of Michigan workmanship in the performance of several intricate fabricating operations to most exacting tolerances.

The pipe manifold end is expanded to 2.225" I. D., a flange superimposed, and a flanged ferrule press-fitted for immediate assembly to exhaust manifold. Two bending operations with minimum reductions permit full flow of gas to hold back-pressure to a minimum. Muffler end diameter of tube is increased by expanding and a bead superimposed to form a "gas-tight" joint.

Michigan engineering and fabrication know-how make for accuracy and economy in the manufacture of this and many other tubular products. Why not consult Michigan about your fabrication problem.



Consult us for engineering and technical help in the selection of tubing best suited to your needs.

Plus Fabricating of our own tubing Michigan is interested **ONLY IN THE FABRICATION OF** Stainless steel, copper, brass and aluminum tubing.

Michigan

RESISTANCE WELDED STEEL TUBING

STEEL TUBE PRODUCTS CO.

THE OLDEST NAME

More than 35 Years in the Business

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FACTORIES: DETROIT, MICHIGAN—SHELBY, OHIO

DISTRIBUTORS: Steel Sales Corp., Chicago, St. Louis, Milwaukee, Indianapolis and Minneapolis—Miller Steel Co., Inc., Hillside, N. J.—C. L. Hyland Co., Dayton, Ohio—Service Steel Co., Los Angeles, Calif.—Strong, Carlisle & Hammond Co., Cleveland, Ohio—Globe Supply Co., Denver, Colorado—W. A. McMichael Co., Upper Darby, Pa.—A. J. Fitzgibbons Co., Buffalo, N. Y.—Harry E. Clark & Co., Houston, Texas.

## Boiler-Burner Units for Use With Oil, Gas, or Both

Boiler-Burner units, designed to satisfy the need for a fully integrated boiler-burner combination, with wide flexibility of usage has been jointly announced by Kewanee-Ross Corp., Kewanee, Ill., and Petro, Cleveland 11, Ohio. The units include both steam and water models, ranging in size from 39 to 456 hp for high pressure steam and from 1,313,000 to 15,300,000 Btu for 15 lb steam or 30 lb water. All models are available, equipped for firing No. 6 or lighter oil, for high or low pressure gas, or for a combination of the two. With combination models, shifting from one fuel to another is quickly and easily done.

Circle No. 50 on Inquiry Card—Page 17

## Portable Hand Lamp Has Flashing Red Beacon

A combination portable electric hand lamp and flashing red beacon is available in both sealed beam (No. 10785) and standard bulb type (No. 10784) models. It has a two-position flashing beacon. When the beacon arm is folded down, it fits snugly over the handle. In this position, the flashing bulb, covered with a red Fresnel lens of molded plastic, serves as a tail light. Carried in this manner, the Beacon lamp lights the way ahead and also warns vehicles approaching from the rear. The red flasher becomes a tower beacon when the arm is raised to the upright position. Made by Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Ill.

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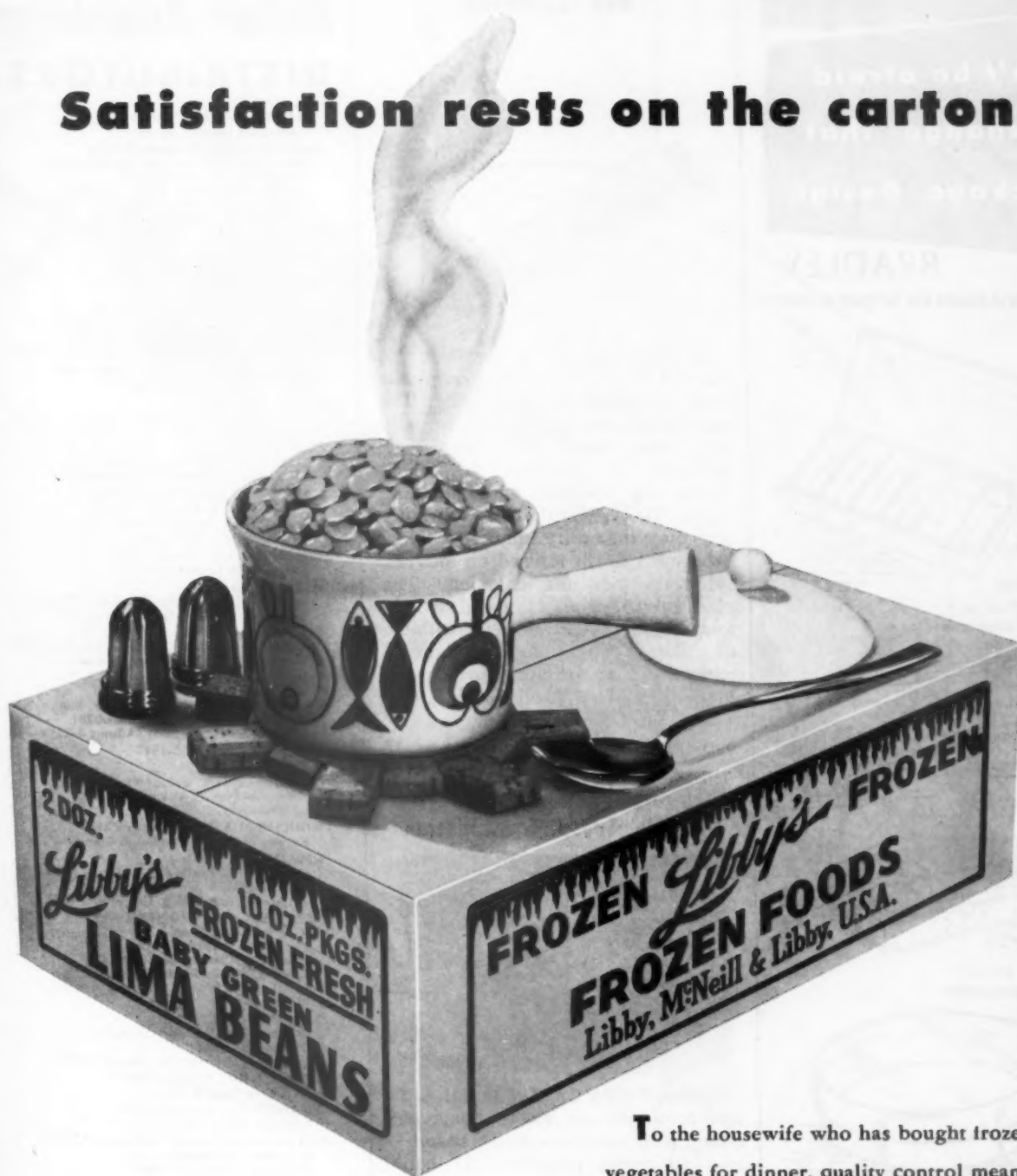
## Control Unit Aids Press Operating Efficiency

A completely flexible method for positioning the run and stop buttons of a press has been developed by Danyl Machine Specialties, Inc., 2100 S. Laramie Ave., Chicago 50, Ill. Essentially, it consists of a push button control bar suspended by a universally adjustable telescoping arm. With each change of dies or operating procedure, the adjustable control bar can be relocated to conserve motion and time, thus increasing the operator's efficiency, comfort and safety. When changing dies, the arm can be swung completely clear of the working area without blocking aisle space. The unit becomes part of the press and does not occupy floor space.

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For More Information Circle No. 175  
—on Inquiry Card—Page 17

## Satisfaction rests on the carton



To the housewife who has bought frozen vegetables for dinner, quality control means simply that she can trust them to look good and taste good when she serves them. One of the safeguards upon which she depends, probably without ever thinking about it, is the shipping carton that carries her vegetables from packer to retailer. Libby, McNeill & Libby is among the many food processors for whom Union corrugated shipping containers continue to do an unheralded but important job.



## UNION BAG & PAPER CORPORATION

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, Ill.  
 Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.  
 Western Division Sales Offices: 4545 West Palmer, Chicago 39, Ill. • Executive Offices: Woolworth Bldg., New York 7, N. Y.

For More Information Circle No. 176 on Inquiry Card—Page 17

**Don't be afraid  
to change that  
Package Design**

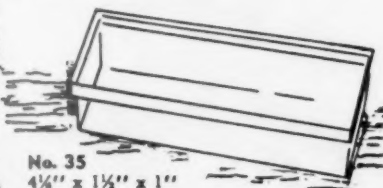
## BRADLEY

has a rigid plastic box for your product



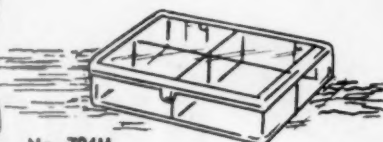
**Series 300**

8 1/2" x 4 1/2" x 1 1/2"  
(assorted compartments)



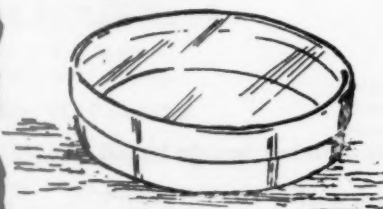
**No. 35**

4 1/2" x 1 1/2" x 1"



**No. 704H**

2 7/8" x 2" x 1/2"  
4 compartments.



**No. 32**

2 3/4" diam. x 5/8" deep

Industrial manufacturers, especially of components, are utilizing our boxes for packaging. We have over 500 rigid polystyrene boxes available FROM STOCK MOLDS, or we will design a box to meet your specific requirements.

Send for illustrated catalog, showing box dimensions . . . you're cordially invited to visit our new factory and showrooms when in Chicago.

World's Largest Assortment of  
Rigid Plastic Boxes



**BRADLEY  
INDUSTRIES**

1650-56 North Damen Ave.  
Chicago 47, Ill.

For More Information Circle No. 177  
on Inquiry Card—Page 17

140

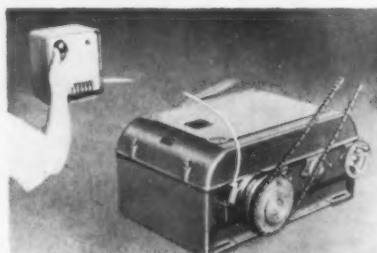
## New Luminaire



A luminaire, called the Cavalier, has full length luminous side panels with no opaque metal framing. The side panels are supported internally by a steel frame. The entire unit provides low surface brightness above the specified 45° shielding angle. To give uniform low brightness over the entire luminaire, a low brightness finish is used on louvers, side reflectors and channels. The plastic side panel is gaged to 100 foot-lamberts. The unit is available in either 4' or 8' lengths equipped with rapid or instant start lamps. Made by F. W. Wakefield Brass Co., Vermilion, Ohio.

Circle No. 53 on Inquiry Card—Page 17

## Electro-Magnetic Clutch With Variable Speed Transmission



Reeves Pulley Co., Columbus, Ind., has combined an electro-magnetic clutch with variable speed transmission to make possible: (1) controlled acceleration; (2) controlled deceleration; (3) selection of operating speeds while machine is stopped; (4) jogging and inching. The combination of the electric clutch and the transmission makes a versatile piece of equipment which is needed in many processes to prevent damage to fragile material and to protect expensive machinery. The load, whether light or heavy, is picked up with a smooth cushioned application of torque from zero to maximum. This not only prevents any undue jerks on the material being processed but also absorbs back lash from gear trains, chains or V-belt drives.

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## Kaiser Aluminum DISTRIBUTORS

ATLANTA, Ga., Alpine 4885  
Federated Steel Company  
BALTIMORE, Md., Peabody 2-7300  
Hill-Chase Steel Company of Maryland  
Asheboro, N.C.: Phone 5200  
Norfolk, Va.: Phone Beach 2601W  
Richmond, Va.: Phone 7-4573  
Roanoke, Va.: Phone 2-7740  
Washington, D.C.: Phone Republic 7-7337  
BEAUMONT, Tex., Phone 4-2641  
Standard Brass & Mfg. Co.  
BIRMINGHAM, Ala., Phone 9-2127  
Hanna Steel Corporation  
CHICAGO METROPOLITAN AREA  
Korhumel Steel & Aluminum Company  
Evanston, Ill.: Ambassador 2-6700  
Fullerton Steel & Wire Co., Merrimac 7-2700  
CINCINNATI, Ohio, Wabash 4480, 4481  
Morrison-Drabner Steel Co.  
CLEVELAND, Ohio  
Nottingham Steel Company, Atlantic 1-5100  
Copper & Brass Sales, Inc., Endicott 1-6757  
DALLAS, Tex.  
Delta Metals, Inc., Logan 7443  
Earle M. Jorgensen Co., Riverside 1761  
DAVENPORT, Iowa, Phone 3-1895  
Nichols Wire & Aluminum Co.  
DETROIT, Mich., Lorain 7-3380  
Copper & Brass Sales, Inc.  
HONOLULU, T.H., Phone 5-2541  
Permanente Cement Co.  
HOUSTON, Tex.  
Standard Brass & Mfg. Co., Blackstone 6531  
Earle M. Jorgensen Co., Orchard 1621  
INDIANAPOLIS, Ind.  
F. H. Langenkamp Company, Imperial 4321  
Korhumel Steel & Aluminum Company  
Idlewood 0424  
LOS ANGELES, Calif.  
Eureka Metals Supply Company, Mutual 7286  
Earle M. Jorgensen Co., Lucas 0281  
Reliance Steel Company, Adams 3-3193  
MIAMI, Fla., Phone 65-1562  
Robinson Bros., Inc.  
MILWAUKEE, Wis., Evergreen 4-6000  
Korhumel Steel & Aluminum Corp.  
of Wisconsin  
MINNEAPOLIS, Minn., Geneva 2661  
Korhumel Steel & Aluminum Company  
NEW ORLEANS, La.  
Orleans Steel Products Co., Inc.  
Raymond 2116  
Standard Brass & Mfg. Co., Auburn 1381  
NEW YORK METROPOLITAN AREA  
A. R. Purdy Co., Inc.  
Lyndhurst: Webster 9-8100  
New York: Chelsea 3-4455  
Newark: Humboldt 2-5566  
T. E. Conklin Brass & Copper Co., Inc.,  
Walker 5-7500  
OAKLAND, Calif.  
Gilmore Steel & Supply Company  
Glencourt 1-1680  
Earle M. Jorgensen Co., Higate 4-2030  
OMAHA, Nebr., Atlantic 1830  
Gate City Steel Works  
ORLANDO, Fla., Phone 5-1515  
Robinson Bros., Inc.  
PHILADELPHIA, Penna., Delaware 6-5400  
Hill-Chase & Company, Inc.  
Allentown: Hemlock 2-8077  
York: York 5790  
PHOENIX, Ariz., Phone 8-5331  
Arizona Hardware Co., Inc.  
PITTSBURGH, Penna., Hemlock 1-5803  
Follansbee Metal Warehouses  
PORT ARTHUR, Tex., Phone 5-9377  
Standard Brass & Mfg. Co.  
PORTLAND, Ore., Tuxedo 5201  
Eagle Metals Inc. of Oregon  
SAN FRANCISCO, Calif., Klondike 2-0511  
Gilmore Steel & Supply Company  
SEATTLE, Wash., Lander 9974  
Eagle Metals Company  
SHREVEPORT, La., Phone 2-9483  
Standard Brass & Mfg. Co.  
SPOKANE, Wash., Keystone 0586  
Eagle Metals Company  
SYRACUSE, N.Y., Syracuse 72-6677  
A. R. Purdy Co., Inc.  
TULSA, Okla., Phone 85-1511  
Earle M. Jorgensen Co.  
WICHITA, Kans., Phone 7-1208, 7-1209  
General Metals Incorporated  
WILKES-BARRE, Penna., Butler 7-3013  
Hill-Chase & Company, Inc.  
WORCESTER, Mass., Worcester 7-4521  
Merrill Aluminum Corporation

For More Information Circle No. 178  
on Inquiry Card—Page 17→  
PURCHASING



## Wh'oll give you room to swing a cat?

**Your Kaiser Aluminum Distributor will!** If you're really jammed for space—perhaps need more room for production—your Kaiser Aluminum Distributor can help you.

By drawing on his large stocks, you can convert your present storage space to production. Or, if you're tight on cash, just eliminate much of your storage and thus reduce your overhead.

Your Kaiser Aluminum Distributor has had plenty of experience serving firms like yours. He stocks a wide variety of aluminum and can provide you with almost any size, shape or alloy—slit, sawed or sheared to your needs.

He's geared to meet your emergencies, to go to work the minute you call. And, if you want to borrow on his experi-

ence, he can also specify the exact type of aluminum your product requires. He can suggest methods of using aluminum more economically. He can supply you with small quantities for experimental work.

All these services mean more profits for you because they help lower your costs. Why not call your Kaiser Aluminum Distributor today?

## **Kaiser Aluminum**

**Your Kaiser Aluminum Distributor is listed at the right. See him soon! ►**

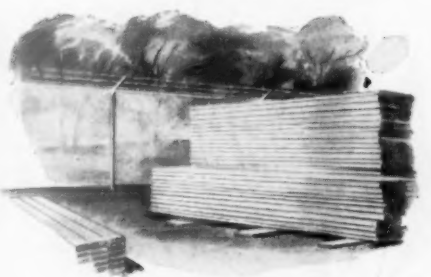
# 4 ways your **ANCHOR FENCE** improves plant operation



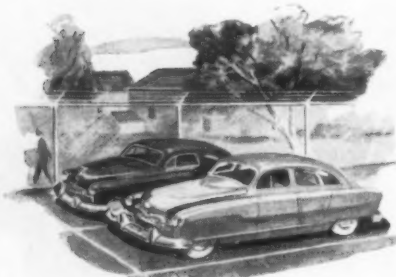
*Protects plants from thieves, vandals, trespassers*



*Controls traffic, permits activity checks*



*Permits safe outside storage of materials*



*Prohibits illegal entry and petty pilfering*

**T**HOUSANDS of companies and the men in charge insist on Anchor Fence, because it does such a multitude of jobs . . . solves so many problems.

And the benefits an Anchor Fence provides are permanent. An Anchor Fence stays *in place*, stays *erect* year in, year out regardless of soil or weather conditions. Deep-rooted "Drive Anchors," square terminal posts and H-beam line posts, all combine to give you maximum protection . . . attractive appearance. So insist on the genuine "Galv-After" Chain Link Fence . . . the fence with the zinc coating applied after weaving — not before.

Remember, though, there is only one *genuine* Anchor Fence. Always look for the familiar orange and black nameplate. It's your guarantee of satisfaction. *Specify* Anchor Fence when you buy.

Meanwhile, send for additional information. Write to: ANCHOR POST PRODUCTS, INC., *Industrial Fence Division*, 6615 Eastern Ave., Baltimore 24, Maryland.

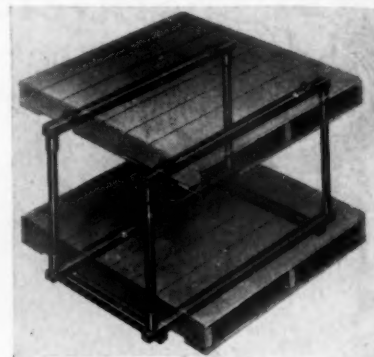
## Anchor Fence®

Division of ANCHOR POST PRODUCTS, Inc.

Plants in: Baltimore, Md.; Houston, Texas; and Los Angeles, Calif.  
Branches and warehouses in all principal cities.

For More Information Circle No. 179 on Inquiry Card—Page 17

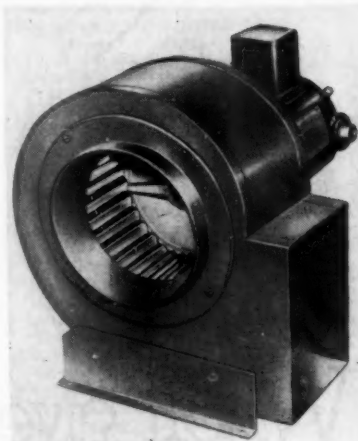
### Better Use of Space Through Portable Pallet Racks



A portable pallet truck is claimed to increase space utility by 33 1/3% to 50% and to expedite incoming-outgoing inventory. It has slip fitting posts. The bottom pallet can be set in or removed from the rack with a fork truck, or the rack and pallet can be picked up and moved as a unit. It can be used to take care of overflow inventory as it permits block storage, which is impossible with one-deep permanent pallet racks. It can also be used where material is being processed to provide stacking of two pallets instead of one. It is made by The Paltier Corp., 1701 Kentucky St., Michigan City, Ind.

Circle No. 55 on Inquiry Card—Page 17

### Large Capacity Blower for Removal of Smoke and Fumes



If it's a problem of quick removal of fumes, smoke, and stale air, a large capacity blower (6-inch wheel) is being offered by Standard Electric Mfg. Co., Inc., West Berlin, N. J. It also serves for cooling and ventilating. Moving up to 600 cfm air, the blower has an automatic cutout which stops the completely enclosed 110 v, 60 cycle motor before it can overheat. Smaller sizes with different capacities and current characteristics are also available.

Circle No. 56 on Inquiry Card—Page 17

# STRAPPING TAPE from one source!

## *strapping service*

### STREAMLINE YOUR PURCHASING

● You probably have a variety of packaging and materials-handling operations, some of which call for steel strapping, and others for strapping tape. You can now fill *all* your requirements from one responsible source. When you use the services of your Brainard salesman, you can consolidate orders, simplify purchasing, and save your own time.

Your Brainard salesman is factory trained in handling and shipping methods. He's equipped to study your operations, to make recommendations on the best system, and to give your personnel *on-the-job* demonstrations. There's a Brainard salesman near you—we have offices throughout the U.S. and in Canada. Consult your telephone directory, or send the coupon now for information on Brainard Strapping Tape, or for an analysis of your packaging problems.

Brainard can help you  
develop strapping systems for

**PACKAGING  
PALLETIZING  
CARLOADING**

**BUNDLING  
EXPORT CRATING  
WAREHOUSING**

### STRAPPING TAPE

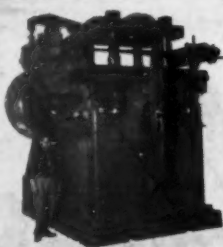


Brainard is the only prime source for *both* pressure-sensitive and gummed strapping tapes. Both are filament-reinforced to provide high tensile strength, and are designed for strapping applications. Your Brainard salesman can recommend and supply the proper dispensers for all applications. Here field engineer Mark Rector demonstrates reinforcing a carton with strapping tape, typical of many applications where tape may be the preferred method. Brainard has devoted over a year's research in testing of different tapes and taping methods, and actual shipping tests in cooperation with railroads.

Brainard Steel Division, Dept. FF-4  
Griswold Street, Warren, Ohio

- ☐ I would like a Brainard Strapping System analysis.  
☐ Please send booklet on Brainard Strapping Tape.

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



**"NO SHUT-DOWNS  
WITH LUBRIPLATE"**

—say HENRY & WRIGHT  
of Hartford, Conn.

"While waiting for delivery of one of our 25-ton Dieing Machines to do a particularly heavy job, a customer was trying to start production of a 10-ton machine. Even though it was lubricated with a conventional grease every eight minutes, the machine had to be shut down for bearings to cool during each coil run. Then, on our recommendation, he changed to a LUBRIPLATE Lubricant. With but two applications of LUBRIPLATE a day, the machine operated continuously except during change of coils."

**REGARDLESS OF THE SIZE AND  
TYPE OF YOUR MACHINERY,  
LUBRIPLATE GREASE AND  
FLUID TYPE LUBRICANTS WILL  
IMPROVE ITS OPERATION AND  
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



For More Information Circle No. 182  
on Inquiry Card—Page 17

## Sharply Tapered Trimmer For Plastic Fabricators

Increasing demand from plastic fabricators for a sharply tapered trimmer has led to the development of a 25 deg tapered face model, now in national distribution as an addition to the O.E.C. line of carbide-tipped tools. Previously, only a straight face and 10 degree taper trims were made. All three models fit a standard 5/16" spindle or arbor. Steel roller guide contains a sealed ball bearing to prevent freezing. Illustrated literature on these tapered trimmers as well as on all of the distinctively copper-colored O.E.C. products is available from Price and Ritzebeck, tool specialists, who make their headquarters at 22150 Meekland Avenue, Hayward 84, California.

Circle No. 57 on Inquiry Card—Page 17

## Plastisol Foam "Breathes"

Soft, flexible foam that "breathes" can be produced and molded continuously as a cushion backing for textiles and other materials. This is accomplished by means of continuous process equipment and use of a plastisol solution. The foam breathes because the gas mechanically mixed with the plastisol produces intercommunicating cells uniformly distributed in molded tubes, blocks or rolls 8" or more thick. This plastisol foam rubber is self-extinguishing once the flame is removed. Continuous foam sheets of almost any thickness and up to 60" width are oven cured and simultaneously molded direct to textiles. Licenses to use the process are issued by Elastometer Chemical Corp., 212 Wright St., Newark 5, N.J.

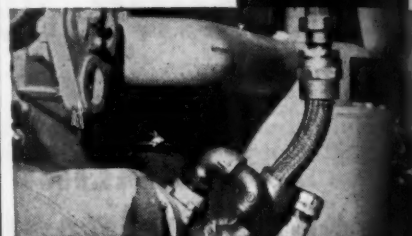
Circle No. 58 on Inquiry Card—Page 17

## Type C Flexible Couplings for Taper-Lock Bushings

Lovejoy Flexible Coupling Co., 4973 W. Lake St., Chicago 44, Ill., is making available three new sizes of type C flexible couplings, adapted for use with Dodge taper-lock bushings. Besides permitting easy fastening to shafting with the firmness of a shrunk-on fit, such couplings adapted to taper-lock bushings permit the carrying of a smaller inventory of coupling bodies tapered for taper-lock bushings. The three new sizes are: C-191 (Dodge bushing No. 2012) for bores 1/2" to 2"; C-226 and C-276 (Dodge bushing No. 2517) for 1/2" to 2 1/2" bores.

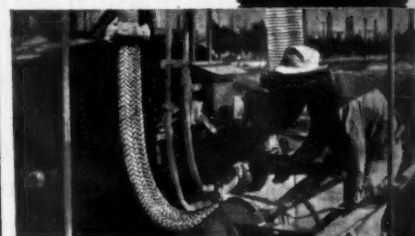
Circle No. 59 on Inquiry Card—Page 17

## YOUR <sup>top</sup> SOURCE all <sup>^</sup> FOR <sup>^</sup> FLEXIBLE METAL HOSE



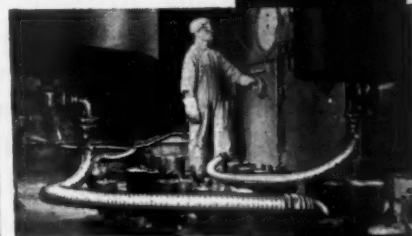
Misalignment and Vibration are easily solved with Atlantic flexible metal hose. Quick delivery insures less idle time for vital equipment.

**Misalignment  
and  
Vibration**



Expansion and Contraction due to intense heat put no strain on piping when flexible metal hose is used as on this Great Lakes Carbon Corp. kiln combustion chamber. Atlantic hose is superior for flexibility and durability.

**Expansion  
and  
Contraction**



Conveying chemicals and gases under pressure and temperature extremes is safe and simple with Atlantic's anti-corrosive, leak-proof hose. It performs long after ordinary hose is scrapped.

**Conveying**

WRITE FOR CATALOG 500

See our Catalogs in Sweet's Files for Product Designers and Mechanical Industries.

Manufacturers of Seamless and Interlocking Flexible Metal Hose in Steel, Stainless Steel, Monel, Bronze. Sizes 1/4"-36" I.D. with appropriate fittings.

**ATLANTIC  
METAL HOSE CO., INC.**

For More Information Circle No. 183  
on Inquiry Card—Page 17

PURCHASING

Property damage  
Lost business  
Fire  
Injuries to customers  
Pilferage

## SUDDEN DARKNESS may be costly...

... injuries to customers ... pilferage ... property damage ... fire ... loss of process control ... lost business ... are often costly results from a sudden lighting failure.

Despite all precautions of utility companies, storms, floods, fires and accidents do interrupt normal supply of electric current—cause thousands of dollars worth of damages. But, dependable, low cost light insurance can be yours with Exide Lightguards. When a power failure occurs, during any time of the day or night, Exide Lightguards go on *instantly and automatically* ... flood lighting vital areas such as exits, stairwells, cashier's cage, sales floors, engine and switchboard rooms. Emergency lighting prevents personal injury, property damage, pilferage, and other business losses.

The importance of our civil defense programs further emphasizes the need for emergency lighting. In many cities and states, it is now required by law. Every businessman should obtain complete facts on the new Exide Emergency Lightguard.



**NEW EXIDE LIGHTGUARD**—A portable, low cost unit that combines exceptionally long service life, low maintenance, with excellent discharge characteristics. Unit can be plugged into any A.C. lighting outlet. When normal supply of current fails, a built-in relay instantly and automatically turns on the powerful floodlight. After normal service is restored, the relay shuts off floodlight and returns battery to charge. The Exide battery, specifically designed for emergency lighting service, is always ready for immediate use. Double lamp units are also available in Model M and Model T. Call in an Exide representative and let him show you how this low cost equipment can protect your business.

Providing dependable emergency lighting is but one of more than 250 different applications of Exide Batteries.

There are dependable Exide Batteries for every storage battery need. They power battery-electric trucks, mine locomotives, trammers and shuttle cars. Railroads depend on them for diesel locomotive starting, car lighting, air-conditioning, signal and communication systems.

Exide Batteries are used by telephone, telegraph and cable companies ... electric light and power utilities ... radio and television stations ... ocean, river and harbor vessels ... municipal fire alarm and police telegraph systems.

Where dependability is vital, you'll find Exide Batteries on the job.

# Exide

## BATTERIES

"EXIDE" Reg. T.M. U.S. Pat. Off.

1888...DEPENDABLE BATTERIES FOR 66 YEARS...1954

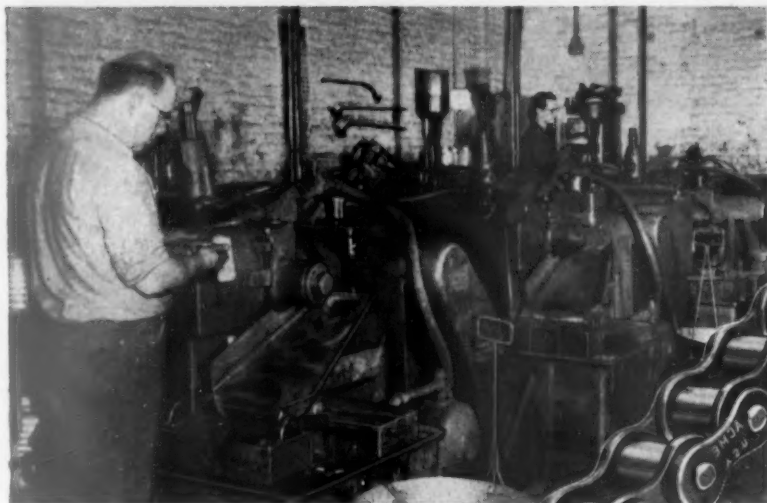
**Exide** INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2 • Exide Batteries of Canada, Limited, Toronto

For More Information Circle No. 184 on Inquiry Card—Page 17

APRIL, 1954

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## No. 4 - Precision Operations in the Manufacture of ACME Chains



*This highly specialized grinding room equipment permits maximum control in grinding and attainment of critical dimensions.*

# ACME CHAINS

**a dependable source of supply**

The ACME line of roller chains include all American standard sizes of machine finish steel roller chain with standard attachments for these chains, the heavy series of standard pitch chains, the extended pitch series of chain attachments for same. ACME also builds special attachments that may be required for special purposes in various lines of industry and for the conveying and elevating of materials; also a line of cable or leaf chains.

Want special type chains? Write or phone Holyoke 2-9458, our Engineers will be glad to help you.



*Write Dept. 8G for new illustrated 76 page catalog on use and application of roller chains and sprockets.*



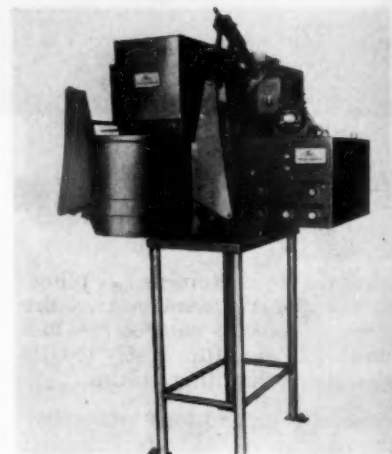
For More Information Circle No. 185 on Inquiry Card—Page 17

## Union Bonnet Bronze Gate Valves for 125-150 lb. Pressure

Union bonnet bronze gate valves, rated for 125 and 150 lb pressure, are announced by the Ohio Injector Co., Wadsworth, Ohio. The valves incorporate in their design heavy, lug-type hexagonal union rings so as to require a minimum of turning effort to seal the flat-mating surfaces of body and bonnet against leakage. The design affords a safety-type body bonnet joint and permits quick easy access to the interior of the valves for inspection and servicing. The large stuffing boxes are filled with a fully molded, one-piece plastic ring which will not harden or crack. Generously-sized, ventilated die cast handwheels are designed to remain cool in operation.

Circle No. 60 on Inquiry Card—Page 17

## New Scales for Weighing Flake, Pellet or Fibrous Material



Thayer Scale & Engineering Corp., 492 East Water St., Rockland, Mass., has built two scales, models 1000G and 1000N, for the production weighing of granular, flake, pellet or fibrous material. Both scales employ a feeding mechanism of unique design which, coupled with the special leverage system, enables high tonnage handling of materials weighing from 10 lb per cu ft to 160 lb per cu ft. Any material that does not flood can be handled in these units. Both models employ the same feeding system and scale mechanism and operate within the same close tolerances. Model 1000G requires very little headspace and may be furnished portable. Model 1000N is the faster operating unit since the weigh hopper can be refilled while the material container is being removed.

Circle No. 61 on Inquiry Card—Page 17

For More Information Circle No. 186 on Inquiry Card—Page 17→

PURCHASING

**HERE'S PROOF:** You can always count on Continental  
for every fastener need!

# Continental Controls Every Phase of Fastener Production!

**... to guarantee you better quality**

From wire drawing to shipping, Continental controls every phase in fastener production under its own roof. Even the tools used are made in the plant. Every step beginning with the design engineer is carefully supervised and checked to insure the finest product possible. Their unequalled Quality Control System is constantly working to protect you.

Whenever special or standard fasteners are being considered, remember that quality production is assured at Continental—it is not just a term—but a rigid policy of perfection.

Call us today or check your nearest Continental distributor for information. You'll get complete control in every step . . . backed by 50 years of fastener experience.



Manufacturers of **HOLTITE** Fastenings



*50th Anniversary*

**CONTINENTAL SCREW COMPANY**

New Bedford, Mass., U. S. A.



**1** generalift pallet crate

replaced **6** heavy nailed crates

**cut packaging costs 50%**

**reduced shipping costs 25%**

McCord Corporation, Plymouth, Indiana, solved both a packaging and a materials handling problem with the Generalift Pallet Crate shown above. Conferences with General Packaging and Sales Engineers produced a crate which held 24 radiators, packed easily, and could be handled by fork-lift from the shipping room all the way to assembly lines. It formerly took 24 heavy nailed crates and from 24 to 30 hours of labor to ready 96 radiators for shipment. Packing the same number in Generalift Pallet Crates takes only 4 hours.

This is only one example of the many packaging problems solved every day—at a saving—in General Box Company's two fine Industrial Packaging Laboratories. General Box packaging experts stand ready to help *you* cut packaging costs, too. Write for complete details.

Find out how other manufacturers are cutting packaging costs. Write for your free copy of "The General Box."



**General Box** COMPANY  
★ ★ ★ ★ ★  
1843 Miner Street  
DES PLAINES, ILL.

Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston, Texas.

**ENGINEERED SHIPPING CONTAINERS FOR EVERY SHIPPING NEED**

- Generalift Pallet Boxes
- Corrugated Fiber Boxes
- All-Bound Boxes
- Cleated Corrugated and Watkins-Type Boxes
- Wirebound Crates and Boxes

For More Information Circle No. 187 on Inquiry Card—Page 17

**High Speed Air-Electric Gage for Polished Surfaces**

Federal Electric Products Corp., 1144 Eddy St., Providence, R.I., has developed a high speed air-electric gage that measures simultaneously two OD's of a highly polished bearing. The measurements are made through an ingenious combination of air gaging and electrical signalling. They are first taken with a dual air snap and transferred through an air electric switch to the electricator unit. This unit, in turn, operates a set of tolerance lights. If both dimensions are good, the green light flashes; if either diameter is under-size the amber light alerts the operator, while a red light indicates oversize.

Circle No. 62 on Inquiry Card—Page 17

**Thermocouple Protection Tube**

A new thermocouple protection tube combines the thermal conductivity and shock resistance of metal with the oxidation and deformation resistance of ceramics. The thermocouple well has a wall thickness of only  $\frac{1}{8}$ ", so time lags in temperature response are drastically reduced. The material itself has a thermal conductivity about the same as cast iron. The tubes have strength at high temperature, are much superior to most ceramics in resistance to thermal shock, and are resistant to air oxidation, combustion gases and attack by molten steel and slag. The metal-ceramic well can be supplied in lengths of 12", 18", and 24". Full data can be had in bulletin P1261 obtainable from The Bristol Co., Waterbury 20, Conn.

Circle No. 63 on Inquiry Card—Page 17

**Low Pressure Pipe Insulation For Water or Steam Lines**

A low pressure pipe insulation is now available for economical use on cold water, hot water or low pressure steam lines. Due to its extra heat-stopping value, a  $\frac{1}{2}$ " thickness of the insulation equals the performance of  $\frac{3}{4}$ " to 1" thicknesses of many other materials used in the low pressure field. Fine fibers of glass, of which the pipe insulation is composed, provide high thermal efficiency. The insulation is available with a canvas covering for installation on hot water or low pressure lines and with a black jacket of asphalt saturated kraft paper to protect against condensation on cold water lines. It is a product of Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Circle No. 64 on Inquiry Card—Page 17

For More Information Circle No. 188 on Inquiry Card—Page 17→

PURCHASING

# Here's why it pays to insist upon *Carpenter* Stainless Tubing



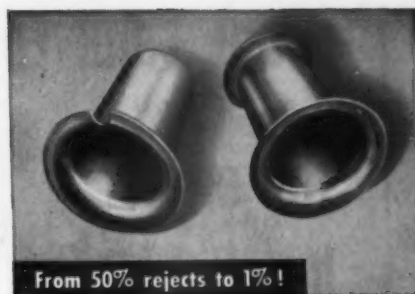
**Easier fabrication and a better product!**

After testing tube from several sources, the manufacturer of these condensers found that Carpenter's quality control at the mill gave him easier bending and a better finished job.



**15% to 20% saving!**

These thermostat sleeves and bulbs require precision fabrication. After changing to Carpenter Stainless Tubing they gained a 15% to 20% saving in the cost of producing each unit.



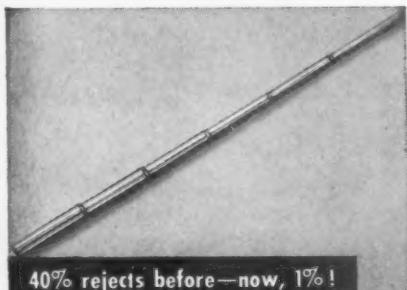
**From 50% rejects to 1%!**

For this tough flaring job two brands of Stainless Tubing were tried with 50% rejects. Then they switched to Carpenter and rejects dropped to less than 1%.



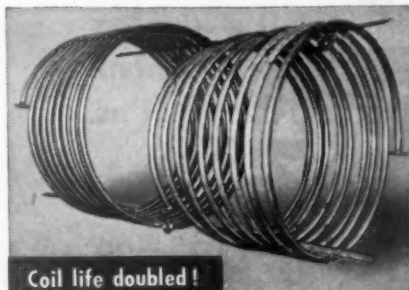
**10¢ saved per piece!**

The fabricator of this refinery equipment needed a ductile Stainless Tubing that would "take" the severe fabrication. Since changing to Carpenter, he figures a saving of about 10¢ apiece.



**40% rejects before—now, 1%!**

Before changing to Carpenter, fabricating rejects ran 40%. Now the collapsible handle of this uranium detector is produced—at a reject rate of only 1%.



**Coil life doubled!**

In a brick-lined hydrolysis tank, lead coils had been used for years. Then they found that coil life could be doubled with Carpenter Stainless No. 20.



**From 20% rejects to none!**

Rejects because of breakage amounted to 20% of each run. Changing to Carpenter Stainless Tubing, rejects were completely eliminated.

These are not unusual or "special" jobs . . . just a few of the many hundred examples in our files of how products have been improved, fabricating problems simplified, and production costs cut by switching to Carpenter Stainless Tubing. They all point up this one significant fact: *All stainless tubing is not the same.*

Whenever any kind of equipment or fabricated part calls for something "extra" . . . in working properties, corrosion resistance, tolerances, finish . . . users of stain-

less tubing and pipe in a wide variety of industries have learned from experience that they can always count on Carpenter quality and Carpenter technical assistance to meet the challenge.

Prove to *your* own satisfaction that there really is a difference in stainless tubing. Specify Carpenter on your next order. You'll discover, as have hundreds of other users, that there is no "or equal" for Carpenter quality and all-around service satisfaction.

**The Carpenter Steel Company, Alloy Tube Division, Union, N.J.**  
Export Dept.: The Carpenter Steel Co., Port Washington, N.Y.  
"CARSTEELCO"

# Carpenter



## STAINLESS TUBING & PIPE



**- guaranteed on every shipment**

## From Tank to Torch

for easier  
handling

2 Hoses  
Bonded  
Together



# Quaker

### TU-LINE WELDING HOSE

Put real safety and savings between tank and torch with this Quaker-engineered dual line hose. No kinking, tangling or fouling. Two individual lines are fabricated into one hose unit by the most modern lead-mould process. Thick, tough, abrasion-resistant covers are red and green for quick hook-up identification. Furnished in coupled or uncoupled lengths. For the most in economy, insist on TU-LINE hose... another Quaker quality product for modern production efficiency.

*Write for free folder and name of nearest distributor.*



Belting, Hose, Packing and  
Moulded Rubber of every  
construction for every need.

**QUAKER RUBBER CORPORATION**  
DIVISION OF H. K. PORTER COMPANY, INC.  
OF PITTSBURGH

**PHILADELPHIA 24, PA.**  
Branches in Principal Cities

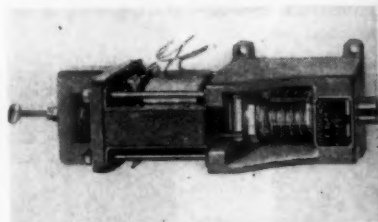
For More Information Circle No. 190 on Inquiry Card—Page 17

### Hydraulic Tubing Connecting for the Fluid Power Field

An inexpensive method of connecting hydraulic tubing to pressure hose from 1/4" ID to 2" OD is found in "Stemlock", a re-usable coupling for the fluid power field by Maeward Couplings, Inc., Olivet, Mich. The coupling assures increased economy because it permits maximum use of low cost tubing and eliminates special "adaptor" couplings. Because Stemlock allows 360 deg rotation of the tube after assembly, easy positioning is assured and very close tolerances are unnecessary. Other outstanding features are fast, easy assembly and 90 deg tube bends within 1/2" of coupling nipple. The manufacturer states that the coupling is guaranteed to withstand burst pressure of hose without danger of bead collapse or blowout.

Circle No. 65 on Inquiry Card—Page 17

### Electric Impact Hammer for Fixed Single Purpose Usage



A compact electric impact hammer suitable for fixed single purpose applications where controlled impacts up to 3500 lb are required is announced by Black & Webster, Inc., Dept. 56, 445 Watertown St., Newton 58, Mass. Named the Electropunch, Jr., it is well suited for use in larger machines where a specified blow or impact is desired as one phase of an overall operation. The unit is highly versatile and lends itself to automatic, semi-automatic and manual operations where speed and high production rates are required. It is particularly suitable for staking, riveting, marking, cutting, blanking, forming and drawing of metals, plastics, fabrics, leather, etc. The unit combines a solenoid with a mounted ram which delivers controlled blows wherever wanted.

Circle No. 66 on Inquiry Card—Page 17

**USE CONVENIENT CARD  
PAGE 17 FOR MORE  
INFORMATION ON PRODUCTS  
IN THIS ISSUE**

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# sheets and strip from its

## Indiana Harbor Works

**T**HIS new continuous cold-reduced sheet mill at East Chicago, with a monthly capacity of 40,000 tons, is now in production and increasing output daily. Orders for sheets and strip, up to 50" wide, are now being booked.

Completion of this mill is the latest step in a series of major additions and improvements at our Indiana Harbor Works since the war, representing an investment of many millions of dollars.

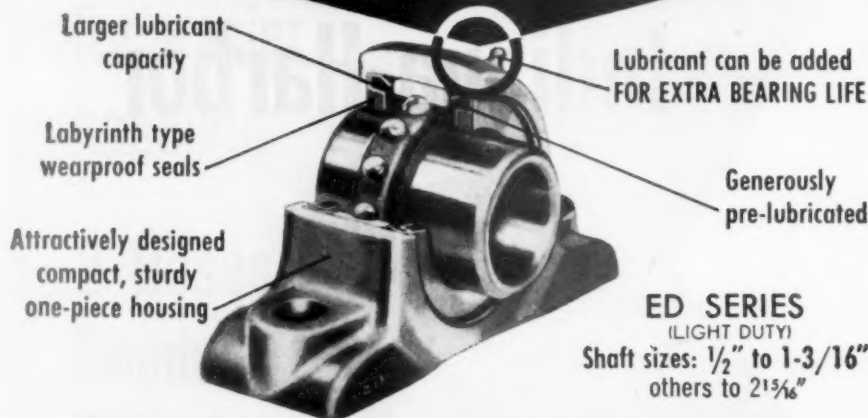
Backed by a completely modernized steel plant, the new mill is ready to serve your needs, no matter how large or small. Write or phone our nearest District Sales Office for further information.



General Offices: Youngstown 1, Ohio • Export Office: 500 Fifth Avenue, New York 36, N. Y.

SHEETS • STRIP • PLATES • STANDARD PIPE • LINE PIPE • OIL COUNTRY TUBULAR GOODS • CONDUIT  
AND EMT • MECHANICAL TUBING • COLD FINISHED BARS • HOT ROLLED BARS • BAR SHAPES • WIRE •  
HOT ROLLED RODS • COKE TIN PLATE • ELECTROLYTIC TIN PLATE • RAILROAD TRACK SPIKES

## An Ahlberg plus feature in LOW COST BEARINGS



### LIGHT DUTY BALL BEARING PILLOW BLOCK

For those jobs where cost is the primary factor, it will pay you to investigate the light duty, low cost ball bearing unit. Let us send you bulletin 7149A.

AHLBERG BEARING CO. 3025 W. 47th Street Chicago 32, Ill.

## AHLBERG

PRECISION BUILT BALL BEARINGS SINCE 1908

For More Information Circle No. 193 on Inquiry Card—Page 17

# BIG NEWS!

ON  
PAGE  
301



For More Information Circle No. 194  
on Inquiry Card—Page 17

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**AMPHENOL**

this is the Trade Mark

**AMPHENOL**

you see most often on

**AMPHENOL**

electronic components

**AMPHENOL**

AN, RF and many

**AMPHENOL**

special types of con-

**AMPHENOL**

nectors, cable and

**AMPHENOL**

radio products

**AMPHENOL**

American Phenolic Corporation

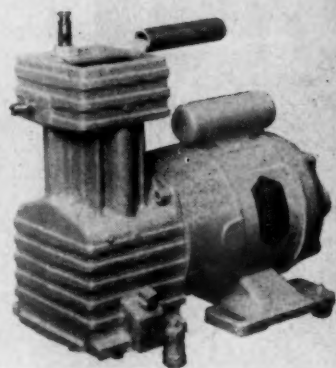
For More Information Circle No. 195  
on Inquiry Card—Page 17

## Phosphoric Acid-Type Cleaners Aid in Special Problems

The Chemical Processing Division, Detrex Corp., Detroit 32, Mich., has a group of phosphoric acid-type cleaners intended mainly for products that are too large or heavy to be phosphate coated with normal production methods. They are also intended for manufacturers whose production does not warrant elaborate equipment for phosphate cleaning. Called the 800 Series, the cleaners can be applied by any practical method such as brush, sponge, dipping, or flowed-on, and can be specified to incorporate such properties as detergency, oil solvency, rust and scale removal. In addition to cleaning, the coating retards peeling and flaking of paint and prevents corrosion.

Circle No. 67 on Inquiry Card—Page 17

## Heavy Duty 1/2hp Portable Air Compressor and Motor Unit



Sharpe Mfg. Company, 1224 Wall Street, Los Angeles, Calif., has a heavy duty 1/2 hp portable air compressor and electric motor unit. Designated as model No. 45, the unit features high output performance, quiet operation, and ruggedness of design. With conservative loading of the heavy duty Nema 66 frame 1750 rpm ball bearing motor, the single cylinder 3 x 1-1/16" compressor delivers 4.5 cfm at 45 pounds pressure. Four new type replaceable valve assemblies contribute to the efficiency of the unit and service is eased in that the same valve unit may be used in either intake or exhaust ports. Splash lubrication helps maintain all moving compressor parts.

Circle No. 68 on Inquiry Card—Page 17

## Adjustable Fog Gun for Fire Protection, General Spraying

Bete Fog Nozzle Inc., Greenfield, Mass., has developed a fog gun that is adjustable from a soft conical fog producer to a hard driving jet. (Please turn to page 160)

For More Information Circle No. 196  
on Inquiry Card—Page 17→

PURCHASING

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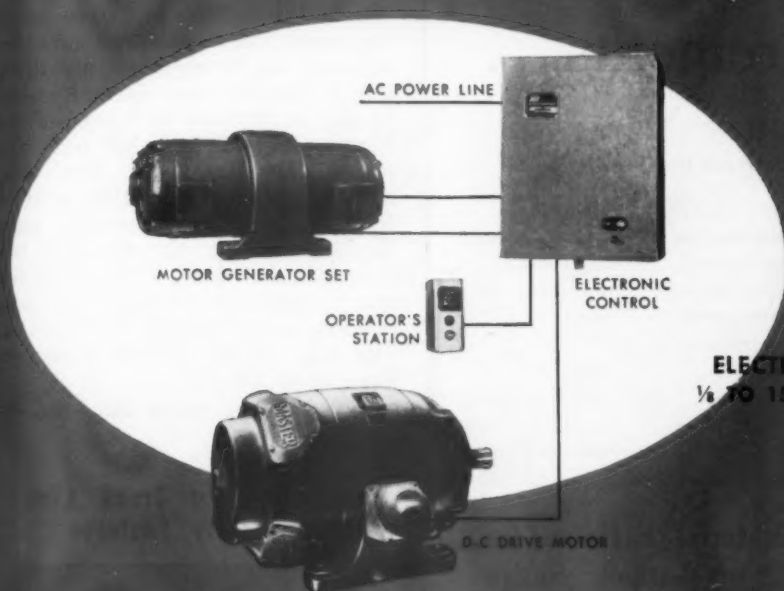
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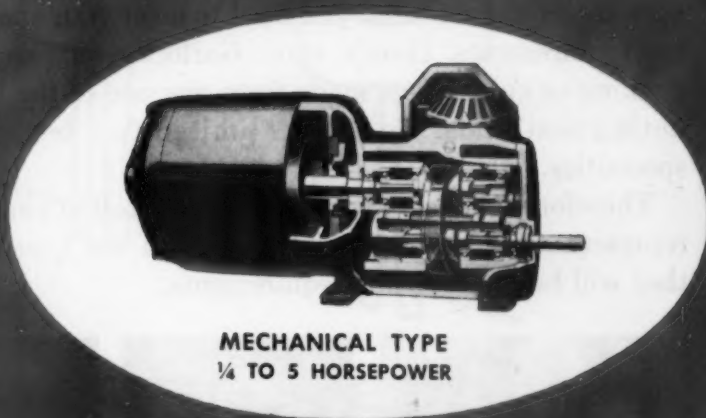
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**ELECTRONIC TYPE**  
**1/4 TO 15 HORSEPOWER**



All Speedrangers are available  
with all five types of Master  
gear reduction units

## WHICH SPEEDRANGER IS BEST FOR YOU

Need variable speed . . . come to MASTER, the only manufacturers of variable speed drives who can offer you a choice between the advantages of MECHANICAL variable speed and ELECTRONIC variable speed operation. And since both the mechanical and the electronic drives are available with any of MASTER'S five types of gear units, you can secure speed variation in either high speed or low speed ranges. Always check with MASTER for impartial help in selecting the drive that is right for you. **THE MASTER ELECTRIC COMPANY • DAYTON 1, OHIO**

# To get the best gasketings for all your requirements...

## Specify GARLOCK GASKETS

### Made from these materials:

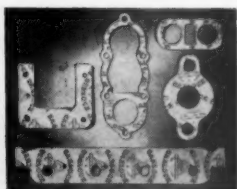
Asbestos, compressed	Natural rubber
Asbestos, metallic	Synthetic rubbers
Asbestos, woven	including:
Cork-fibre, glycerine	Buna-N (Hycar)
treated or synthetic-	Butyl
rubber impregnated	GR-S
Leather	Neoprene
Kel-F†	Silicone
Teflon‡	Thiokol
	Vegetable fibre

There is always *one* type of gasketing material that's best for a particular application. When you call on Garlock, you're sure to get the material you need to meet your specific service requirements. Here's why: Garlock can furnish sheet packing or cut gaskets made from *any* one of the basic gasketing materials. We are *not* limited to a few gasketing specialties.

Therefore, whenever you need gaskets call in your Garlock representative. He can supply you with the type of gasket that will best meet your requirements.



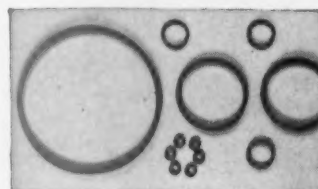
Molded Rubber Gasketing Devices



Duck Inserted Rubber Gaskets

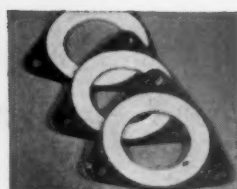


Cork-Fibre Sheet



"O" Ring Gaskets

\*Registered Trademark



"Teflon" Envelope  
Type Gaskets with  
Compressible Fillers



GUARDIAN® Asbestos-  
Metallic Gaskets

### THE GARLOCK PACKING COMPANY, PALMYRA, N. Y.

Sales Offices and Warehouses: Baltimore • Birmingham • Boston • Buffalo  
Chicago • Cincinnati • Cleveland • Denver • Detroit • Houston • Los Angeles  
New Orleans • New York City • Palmyra (N. Y.) • Philadelphia • Pittsburgh  
Portland (Oregon) • Salt Lake City • San Francisco • St. Louis • Seattle  
Spokane • Tulsa.

In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.



†The Kellogg Company's  
Trademark

‡Du Pont's Trademark for  
its Tetrafluoroethylene  
resin

# GARLOCK

PACKINGS, GASKETS, OIL SEALS  
MECHANICAL SEALS  
RUBBER EXPANSION JOINTS

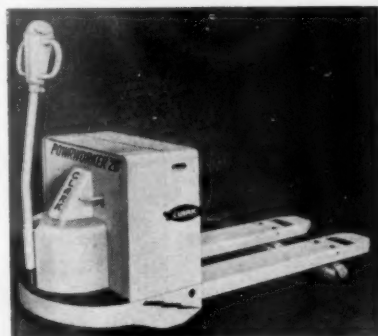
For More Information Circle No. 197 on Inquiry Card—Page 17

(Continued from page 158)

Adjustment is made instantly by turning a rubber gripped handle one-half turn. Wide or narrow angle fog cones with any desired coverage or drive can be obtained, according to the manufacturer. Instant on-off control is obtained by means of the trigger shut-off included with the nozzle. Made with garden hose thread, the new model H5G is ideal for industrial fire protection, particularly indoors; for spraying insecticides and weed killers; and for many applications where an adjustable spray pattern is required. The gun works well at pressures from 30 to 150 psi.

Circle No. 69 on Inquiry Card—Page 17

### Powered Hand Truck Line Has Safety Features



Powered hand trucks for materials handling, embodying several distinctive safety features are announced by the Powrworker Section, Industrial Truck Div., Clark Equipment Co., Battle Creek, Mich. Named the "Powrworker 26" line, the trucks, in addition to an increased safety factor, feature a short overall length and maximum load stability. The brake operates on the motor shaft, transmitting the braking effort from the source of power through the gear ratio of 22 to 1. The brake is spring applied and actuates a dead man switch, automatically breaking the power circuit when steering handle is in a vertical or horizontal position. Load stability is achieved by a low center of gravity for the truck and use of a drive wheel 10½" diam and 6" wide.

Circle No. 70 on Inquiry Card—Page 17

**FOR FURTHER INFORMATION  
ON PRODUCTS IN THIS ISSUE  
PLEASE USE INQUIRY CARD  
ON PAGE 17**

For More Information Circle No. 198  
on Inquiry Card—Page 17→



## NEXT TIME...ORDER SCOTTISSUE TOWELS!

1. They drink up water like a thirsty camel.
2. They're strong — even when soaking wet.
3. They're so soft that many people use them as face cloths.
4. They're clean and white — of course.
5. They're double-fold to dry double-quick.

JUST ONE  
SCOTTISSUE TOWEL  
DOES THE JOB!



ScotTissue Towels have an exceptionally high fiber content. This "bulk," plus generous size and double fold, make a case of 3,750 ScotTissue Towels weigh 46 lbs.\* Some paper towels cost less for 3,750 but are 10 to 20 lbs. lighter\*—hence less drying power. Write for more facts. Scott Paper Company, Dept. P-6, Chester, Pa.

\*Shipping weight

**SCOTTISSUE**



**TOWELS**

Symbol of the right kind of washroom

"ScotTissue," Reg. U. S. Pat. Off.

For More Information Circle No. 199 on Inquiry Card—Page 17

APRIL, 1954

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# 5 Reasons Why You Should USE Pittsburgh Red Stripe Brushes!



✓ **Best Hogs' Bristle Obtainable!** Fine hogs' bristle is hard to get now-a-days, but Pittsburgh's world-wide contacts buy the best of it for use in Red Stripe brushes.

✓ **Finest Man-Made Bristles!** Pittsburgh-developed Neoceta has been proved the best man-made bristle yet! Especially good for use in latex-emulsion paints, Neoceta is sold under the Red Stripe label in combination with natural bristle and in 100% Neoceta fills.

✓ **Smoother Paint Jobs!** With the new Neoceta Velvet-Tip process, along with superior mixtures of pure hogs' bristle, all Red Stripe brushes have the resiliency, snap and release characteristics that mean smoother work every time!

✓ **Consistent Quality!** Pittsburgh's reputation was built on the Gold Stripe brush—and today's Red Stripe is made under the same constant vigilance and extra manufacturing control that assure you consistent quality, brush after brush!

✓ **Backed By A Century of Experience!** Virtually 100 years of brush manufacturing experience stand behind every Red Stripe brush. Pittsburgh makes *only* fine brushes!

For smoother, neater, faster paint jobs—in short, for the finest paint brushes on the market today—be sure to insist on Pittsburgh Red Stripe Brushes! For the address of the Pittsburgh supplier nearest you, write: PITTSBURGH PLATE GLASS CO., *Brush Div.*, Dept. M, 3221 Frederick Ave., Baltimore 29, Md.

*There's a Pittsburgh Brush for every home and industrial use*

**PITTSBURGH**

**Red Stripe**

**BRUSHES**



BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS • FIBER GLASS

**PITTSBURGH PLATE GLASS COMPANY**

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

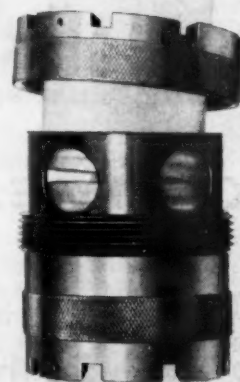
For More Information Circle No. 200 on Inquiry Card—Page 17

## Machine Speeds Dissolving, Dispersing, Mixing Operations

A bottom-drive, ultra-fast machine speeds up dissolving, dispersing and mixing operations by as much as 32 times. The machine is assembled with the motor mounted beneath the unit. The shaft driving the patented impeller enters from the bottom of the tank. This eliminates aeration of materials during processing and permits easy pressurizing of the tank. Development of this machine was caused by the blending of polyethylene and wax. These materials have proved efficacious in sealing the drive shaft beneath the liquid in order to prevent air from following down the shaft and into the solution. With the motor and drive shaft mounted beneath the machine, mixing tanks can now be effectively pressurized. It is a product of Cowles Co., Inc., Cayuga, N.Y.

Circle No. 71 on Inquiry Card—Page 17

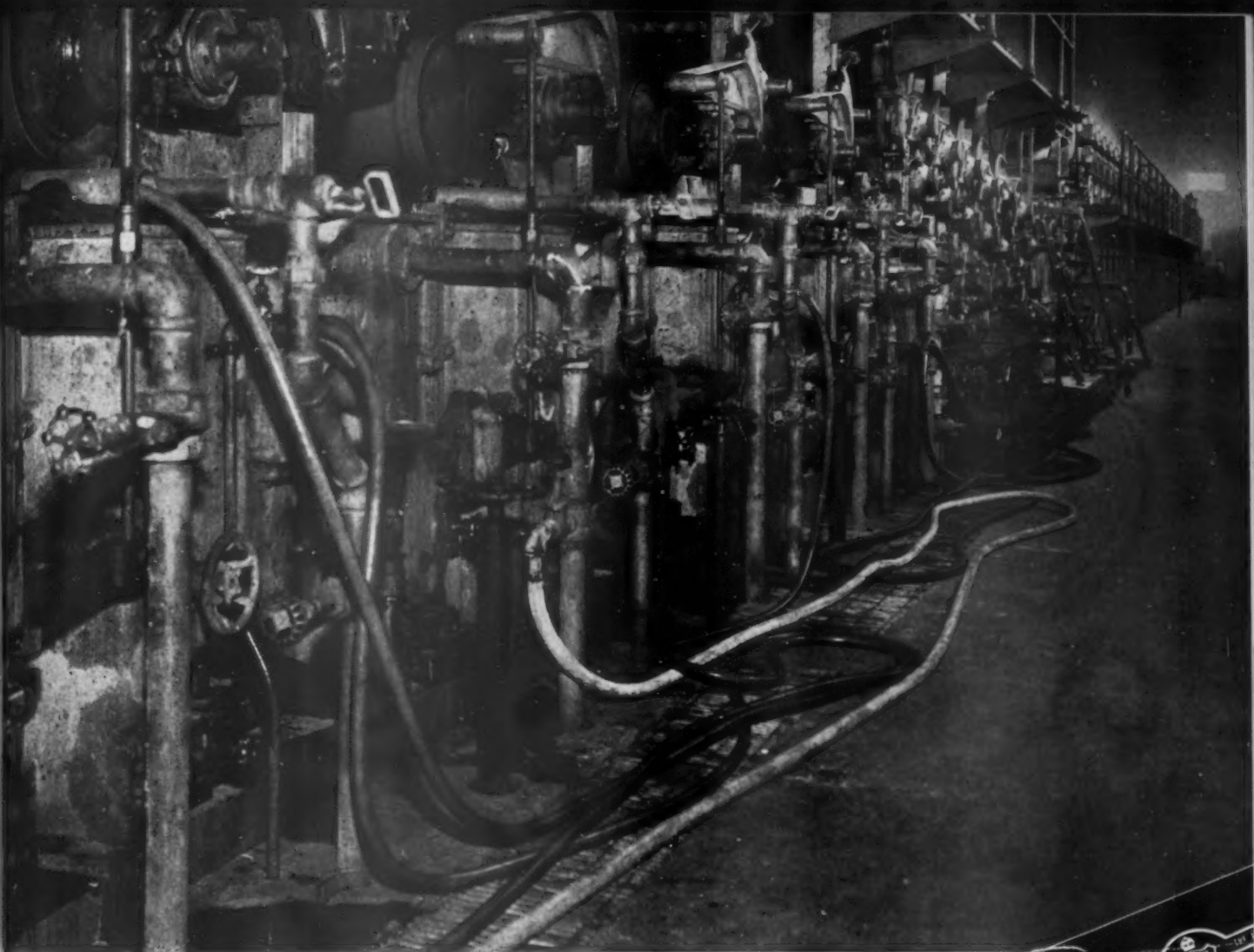
## Coupling For Metal Tubes Offers Great Weight Reduction



A new coupling transforms metal tubes into flexible assemblies at a great reduction in weight. While this coupling was primarily designed for use in aircraft (fuel lines, oil lines, etc.) it can be used on any equipment where gas or liquid is transferred. Among its advantages: it is 80% lighter than standard connections; it saves space because it can be installed in much smaller apertures. It is capable of taking care of misalignment to 1/6", tube separation to 1/4" and allows at least 4 deg tube flexure. It maintains a tight seal in temperatures from—65 F to 600 F. Made by E. B. Wiggins Oil Tool Co., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

Circle No. 72 on Inquiry Card—Page 17

For More Information Circle No. 201 on Inquiry Card—Page 17→



## Thermoid Hose Versatility Cuts Your Costs

The versatility of Thermoid multi-purpose hose makes stocks of many different types unnecessary. You cut your hose cost through reduced inventories, simplified buying and less storage space. Losses from end remnants are greatly reduced.



### VERSAFLEX

Excellent for handling air, water or oil under high pressure. Use also for butane, propane and as fire fighting booster hose. Red cover.

### VERSICON

Most versatile hose ever offered. Handles air, water, oils, greases, gases and dilute acids. A real inventory-saver! Brown cover.

### AQUAIR

Handles air, water, gases where oil is not present. Ideal for oxygen and acetylene welding operations. Tough, yet light and flexible. Green cover.

In addition, Thermoid makes other types of hose for specific applications, such as paint spray, sand blast, dust collecting, etc. Call your Thermoid Distributor. He can help you select the hose best suited for your requirements. Or write direct for our latest catalogs.



# Thermoid

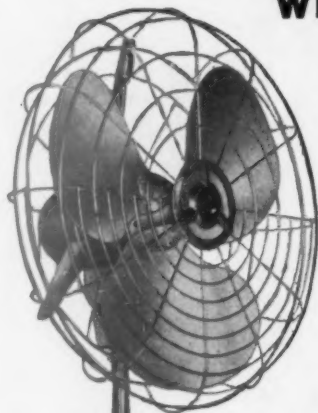
Conveyor & Elevator Belting • Transmission Belting  
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

Rubber Sheet Packings • Molded Products  
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

# CUT COSTS

## with EMERSON-ELECTRIC AIR CIRCULATORS



If stale, dead air handicaps your employees and drives customers away, *it's costing you money.*

You can cut this cost with Emerson-Electric Air Circulators. They move large volumes of air quietly . . . to keep "living conditions" inside your buildings comfortable and pleasant in all seasons. Don't let bad air add to your overhead . . . send for complete installation data today.

### EMERSON-ELECTRIC AIR CIRCULATORS

Backed by the famous 5-Year Factory-to-User Guarantee, these powerful fans are available in 24" and 30" blade sizes, with two-speed, ball-bearing capacitor-type motors lubricated for 6,000 hours' service. Your choice of floor, counter, wall or ceiling mountings. For further information see your electrical contractor or write for Bulletin No. 768.



### EMERSON-ELECTRIC EXHAUST FANS CUT COSTS, TOO!

For complete ventilation of your buildings investigate Emerson-Electric's complete line of direct- and belt-drive exhaust fans, in capacities ranging up to 19,350 c.f.m. Write for new catalog No. 768-A.

THE EMERSON ELECTRIC MFG., CO., St. Louis 21, Mo.

**EMERSON**  
FANS • MOTORS



**ELECTRIC**  
APPLIANCES

For More Information Circle No. 202 on Inquiry Card—Page 17

## Radiant Heating Panels for Industrial Applications

A radiant heating panel is claimed to offer an improved concept in infrared heating for industrial applications. Long-wavelength, black-body radiation from an area source assures temperature uniformity over large areas and maximum heat absorption, regardless of surface texture or color of the material being treated. The units are suitable for operation at temperatures as high as 350 C and in watt range densities from 2.6 to more than 9 watts per square inch. The heating unit is uni-directional and is backed with an aluminum steel reflector, utilizing electrical energy to maximum efficiency. Hence panels operate without additional insulation and with minimum maintenance costs. They are useful for drying printed textiles, curing plastics, etc. Corning Glass Works, Corning, N. Y. makes them.

Circle No. 73 on Inquiry Card—Page 17

## Electric Radiant Heater for Baking, Curing, Drying



Cleveland Process Co., 1965 East 57th St., Cleveland 3, Ohio, has developed a new type of electric radiant heater in the far-infra-red field. General usage of this heater include baking, curing, drying, plasticizing and other processing where temperatures of 400 F to 500 F are required. On applications where higher temperatures are required, such as heat treating, carburizing, etc., heaters with ratings up to 1600 F can be supplied. A single heating unit consists of a fused quartz tube, 48" long, in which is encased a heavy duty nickel-alloy heating element. The fused-quartz tube is acid-proof, nor can anything extraneous enter to cause shorts and heater failure.

Circle No. 74 on Inquiry Card—Page 17



● CUT SHEETS fit your air or electric vibrating sander

● FOLD it like paper...TEAR it like cloth

## sides...do from 7 to 15 times the work!

hand sanding, full 9" x 11" sheets fold like paper, tear like cloth to any width you desire. Cut sheets fit your oscillating or vibrating sanders. Discs give best results when used wet with CARBORUNDUM's FASTCUT Pad 85 Assembly. Ordinarily, no adhesive is needed when sanding flats or slight contours...the surface of the FASTCUT Pad holds the disc in place. Full sheets, cut sheets and discs come in 180 and finer grit sizes.

### WHERE WOULD YOU LIKE TO USE SAND SCREEN?

We will work with you to help you take full advantage of SAND SCREEN's many advantages and cost-cutting features. Just tell us what operations you would like to test it on. Call your CARBORUNDUM Distributor or Salesman (listed under "Abrasives" or "Grinding

Wheels" in the yellow pages). Or, if you prefer, write to us. Send the coupon for a sample and full details, anyway!

### Send for Folder...use this Coupon!



THE CARBORUNDUM COMPANY, Dept. P 82-46  
Niagara Falls, New York  
Rush folder about new SAND SCREEN.

NAME

TITLE

COMPANY

STREET AND NUMBER

CITY

ZONE

STATE

# CARBORUNDUM

REGISTERED TRADE MARK

For More Information Circle No. 204 on Inquiry Card—Page 17

APRIL, 1954

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# PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •



• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you...

*Write* to PAGE FENCE ASSOCIATION, Monessen, Pa., or look in Thomas' Register for listing of Page Chain Link Fence Distributors under "PAGE STEEL AND WIRE DIVISION," or see MacRae's Blue Book for listing under "FENCING, WIRE, LINK," or consult Sweet's Industrial Construction File. PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC. For More Information Circle No. 205 on Inquiry Card—Page 17

## COOLER FOUNTAIN NEWS

### VITREOUS CHINA TOPS NOW AVAILABLE

Popular 15-inch Line of Halsey Taylor Cooler  
Fountains now with Vitreous China Tops



Industrial users of Electric Coolers prefer the space-saving 15-inch size. Therefore, it's welcome news to know that Halsey Taylor now furnishes this popular size with Vitreous China Tops.

Gleaming vitreous china is always easy to keep clean, and—with the Halsey Taylor distinctive two-stream projector—these coolers are the most hygienic and health-safe you can buy.

See our catalog in Sweet's or write!



Stainless Steel Tops Also Available in 15-inch Cabinets or Cafeteria Models

THE HALSEY W. TAYLOR CO., Warren, Ohio

## Halsey Taylor

COOLER FOUNTAINS

For More Information Circle No. 206 on Inquiry Card—Page 17

## 12-Model Line of Explosion Proof Electrical Lift Trucks

A 12-model line of explosion-proof, electrically operated hydraulic trucks, for materials handling where dangerous fumes or dust prevail, has been announced by the Big Joe Mfg. Co., Chicago, Ill. All the explosion-proof motors have Underwriters Laboratories Class 1, Group D or Class 2, Group E, F, G, atmosphere ratings for all motor switches, solenoid valves, solenoid housings, tubings, outlets and fittings. Their spark-proof wheels are made and tested to meet strict governmental specifications. The average reading in a five-reading test is 200,000 ohms, while the maximum reading is over a million ohms—the greatest safety factor that it is possible to incorporate.

Circle No. 75 on Inquiry Card—Page 17

## Quick-Setting Adhesive Ups Wood Products Production

Glue room bottlenecks can be broken up by a new quick-setting industrial adhesive, according to Timber Engineering Co., Dept. C-10-B, 1319—18th St., N.W., Washington 6, D. C. The product, developed for the furniture, wood-working and plastic-to-wood fabricating industries is named Colpres 10-B. It is a two-part resin adhesive that requires only 10 minutes, at room temperature, from clamping to machining. In this short period, a shear strength of 500 psi is developed, while near-ultimate strengths of around 3,500 psi are not uncommon with dense hardwoods after 24 hours.

Circle No. 76 on Inquiry Card—Page 17

## Small Size and Light Weight Precision Potentiometers

Jet Electronics, Inc., 93 Massachusetts Ave., Boston, has a 7/8" precision potentiometer, available with 360 deg electrical rotation as well as mechanical rotation, in resistance ranges up to 50,000 ohms ( $\pm 1\%$ ). The complete unit weighs only 1/2 oz and is for use where small size and light weight are desirable and extreme requirements must be met. The life of the potentiometer is claimed to be in excess of 1,000,000 cycles of noise-free operation. The units are rated at 1 watt at 25 C and the resistance alloy has a temperature coefficient of .00002 parts per degree C for values of 500 ohms or more. Ambient temperature rating is from -67 F to 250 F.

Circle No. 77 on Inquiry Card—Page 17  
PURCHASING



## "CASE" HISTORIES FROM ATLAS PLYWOOD'S SHIPPING CONTAINER CLINIC

(Safe-Transit Certified)

New case designed by Atlas Plywood engineers  
weighs 47% less than previously  
used wooden box . . . holds contents  
more securely . . . reduces shipping costs

## THIS CASE WASTED MONEY

This cumbersome wooden box was the container previously used for shipping a unit cooler\*. On arrival at the Atlas Plywood Shipping Container Clinic, the gross weight of box and contents was 220 pounds. Because of inadequate blocking, the cooler was loose in the box.



## THIS CASE SAVED MONEY

After thorough laboratory investigation, Atlas Plywood engineers designed this plywood case. Much stronger, and with more secure blocking than the old wooden box, it is a safer shipping container. And being 47% lighter than the box — 41 pounds as against 77 pounds — it reduces the gross weight by over 16%, for a considerable cut in shipping costs!



\*Cooler made by Bush Manufacturing Co., West Hartford, Conn.

### CAN YOUR SHIPPING COSTS BE CUT?

There's one sure way to find out. At no cost or obligation to you, your present shipping containers can be tested in the Atlas Plywood Shipping Container Clinic, on equipment that simulates all conditions of actual transit. If improvements are needed in your container design, Atlas Plywood engineers will submit them for your approval.

It should then be pretty clear to you whether you can reduce your shipping costs, including what you pay for shipping the container and what you pay for damages.

This free service by Atlas Plywood — *the greatest name in plywood* — includes an invitation to come along and watch the tests. Your Atlas Plywood representative (see Classified Telephone Directory) will be glad to make the arrangements. Or write to Atlas Plywood Corporation, 1432 Statler Building, Boston, Mass.

# Atlas Plywood

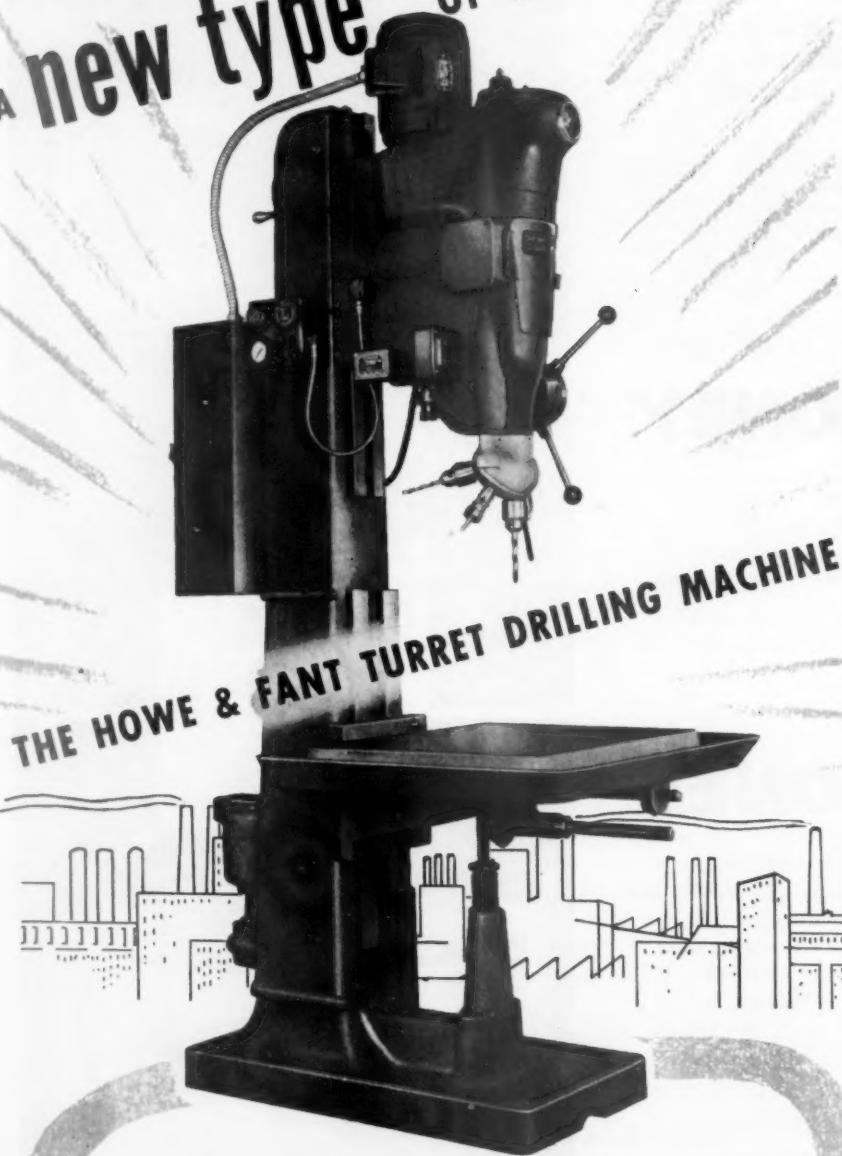
CORPORATION

FROM FOREST TO FINISHED PRODUCT



PLYWOOD  
CONTAINERS  
FLUSH DOORS  
HARDWOOD PANELS

# announcing A new type OF MACHINE TOOL



## THE HOWE & FANT TURRET DRILLING MACHINE

The HOWE & FANT Turret Drilling Machine is a revolutionary development that does for drilling what the modern turret lathe does for turning.

**FASTER.** One operator performs up to six different drilling and tapping operations, in any sequence, at a single station. No time is lost moving work from one station to another. Speeds, depths, and reversals for tapping are all pre-set, and require no attention during successive operating cycles.

**MORE VERSATILE.** Speed of each spindle is independently determined, and is infinitely variable from 200 to 4000 rpm. Depth stops are individually set for each spindle, and are accurate to less than 0.002 inch. For tapping, automatic reverse at twice forward speed is available at each spindle.

**LOWER COST.** All this is yours in a half-inch capacity machine that takes only 34 by 50 inches of floor space . . . at a basic cost of \$2950.

### HOWE & FANT, INC.

34 Fitch Street, East Norwalk, Conn.

*See It In Operation at Booth 1967*

A.S.T.E. Industrial Exposition, Philadelphia, April 26-30

Or Write for Bulletin 5403

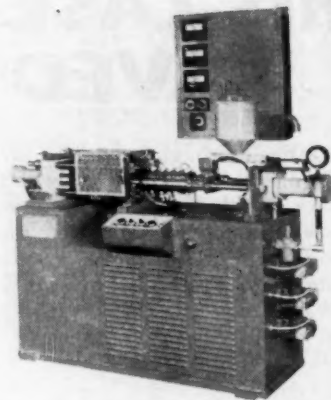
For More Information Circle No. 208 on Inquiry Card—Page 17

### Portable Drilling Machine Works from Any Position

A portable drilling machine, made by Artos Engineering Co., 2757 S. 28th St., Milwaukee 46, Wis. can work from any position around large unwieldy steel beams, girders and weldments. The machine is operated by push button and automatically drills holes up to 2" diam at right angles to the work surface. Suspended from a crane or other overhead structure, the machine is quickly and easily moved over and around cumbersome workpieces too bulky to be handled on conventional metalworking equipment. The drill is said to penetrate steel on a line perpendicular to the surface or surface tangent. Operating data on the machine are: maximum drill diameter: 2"; drill rpm: 175 to 500 rpm; feed per revolution: .005 to .020 in.

Circle No. 78 on Inquiry Card—Page 17

### Plastic Injection Molding Unit



Moslo Machinery Co., 2443 Prospect Ave., Cleveland 15, Ohio, says its model No. 73 automatic plastic injection molding machine gives unusual performance. The unit runs at 1200 cycles an hour and will plasticize 25 lb of material per hour, fed from a 14 lb capacity metered hopper. Eight-inch by nine-inch standard DME mold blanks are employed. The mold casting area is guaranteed at 20 square in. plus. Combined hydraulic action at the end of the forward and reverse strokes of the clamping cylinder eliminates fast bumps on the knock-out and parts are ejected gently. Automatic compensating adjustable feed device portions out metered quantities of material up to 2 oz. The machine is said to be ideal for molding all thermo plastics at high speed and small mold cost.

Circle No. 79 on Inquiry Card—Page 17

# Office Equipment and Supplies section of **PURCHASING Magazine**

APRIL, 1954

Modern lighting, such as the Smithcraft Area Illumination used in this office, makes this office of Niagara Mohawk Power Co., Syracuse, N. Y., a more efficient and productive working area.



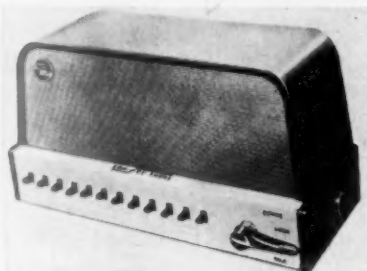
**PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION**

205 EAST 42ND-STREET, NEW YORK 17, N. Y.

## OFFICE EQUIPMENT

# News

Introduction of the latest in the extensive line of Maso intercoms, the Deluxe 12 and 24 station President Series, has been announced by **Mark Simpson Manufacturing Co., Long Island City, N. Y.** The AC powered series offers a basic system adaptable to all types of intercommunication setups.



A single master can be used with up to 24 remote stations. An executive system of up to 25 masters can be used in a completely private intercom system or masters and remotes can be intermixed. A telephone-type handset can be plugged into any master for privacy in communication with other masters.

Circle No. 80 on Inquiry Card—Page 17

**Ditto, Inc., Chicago,** has announced three promotions. **L. A. Watkins**, formerly general sales manager, is now vice president in charge of domestic sales. **C. E. Snow** was elected vice president of Ditto Press, Inc., the company's forms printing division in Cincinnati. **S. J. Burke** was named vice president of Ditto of Canada, Ltd., the company's Canadian division.

Circle No. 81 on Inquiry Card—Page 17

Featuring rigid spectral and luminance characteristics, the new 10 by 10 **Kodak Transparency Illuminator** has been announced by **Eastman Kodak Co., Rochester, N. Y.** It can be used for viewing all size color transparencies up to and including 8" x 10". It uses a standard 60 watt tungsten lamp and is ready for immediate use on 110-220 volt AC or DC.

Circle No. 82 on Inquiry Card—Page 17

The **F. S. Webster Co., Cambridge, Mass.,** has announced that its **Dura-metric carbon paper** is now available in a variety of weights and finishes to meet all typing requirements. A feature of this carbon paper is the **Micro-metric right hand margin printed scale**, which assures a typist of complete vertical spacing control and allows removal of carbons from a typing setup without smudging fingers in the process. Added features are a special **Shur-Flat** treatment on the back of each sheet to prevent curling or wrinkling and a construction process to provide additional crispness, durability and long-wearing qualities.

Circle No. 83 on Inquiry Card—Page 17



A new, all steel stand, especially designed to provide safe support for modern electric office machines, is now added to the line of business machine stands of **Maso Steel Products, Chicago.** Two steel drop leaves attach level with the top or 4½" below. Tops are a full 18¼" x 19½" and drop leaves 18¼" x 14¼". Height of the stand is 27".

Circle No. 84 on Inquiry Card—Page 17

**Diebold, Inc., Canton, Ohio,** has named **Daniel M. O'Connell** as service manager for the firm's installations of bank vaults, safes and bank protection systems.

Circle No. 85 on Inquiry Card—Page 17

**American Seating Co., Grand Rapids, Mich.,** is producing a fully-upholstered folding chair. It features a seat of spring-arch construction and is extra wide and extra deep.

Circle No. 86 on Inquiry Card—Page 17

**International Business Machines Corp., New York City,** has released a booklet called "Light on the Future" containing the principles and components of electronic data processing equipment. The booklet explains the organization of digital and analogue computers and describes, briefly, the functions of input, storage, arithmetic, control and output components. It can be obtained from IBM's Department of Information.

Circle No. 87 on Inquiry Card—Page 17

A plastic-back carbon paper in three correspondence weights with five degrees of inking, has been announced by the **Underwood Corp., New York City.** The plastic backing minimizes curling, increases type blow resistance and eliminates slippage. The name of the product is **Topper** and it is available in light, medium and standard weights.

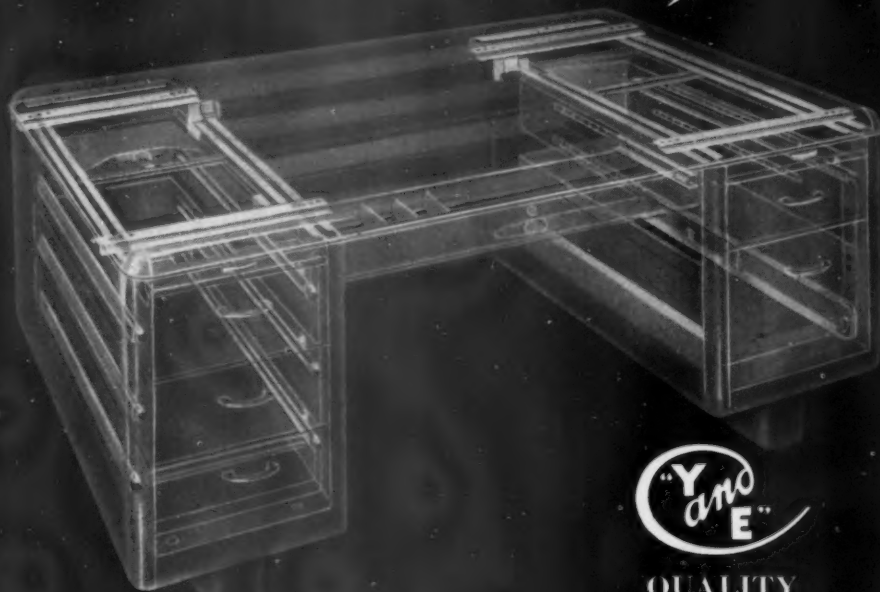
Circle No. 88 on Inquiry Card—Page 17



A compact spirit process machine that will print gummed labels, tags and cards has been announced by **Dupli-copy Co., Chicago.** Named the **Dupli-copy Printer**, it will produce 100 units per minute in as many as 5 colors at one time. Cards, tags or labels up to 4" by 7" can be printed. It feeds automatically, has rubber suction feet, bearings are sealed in oil, and is made of heavy-gauge steel finished in gray baked enamel. The complete unit weighs 13 lbs.

Circle No. 89 on Inquiry Card—Page 17  
(Please turn to page 182)

*All new engineering inside*

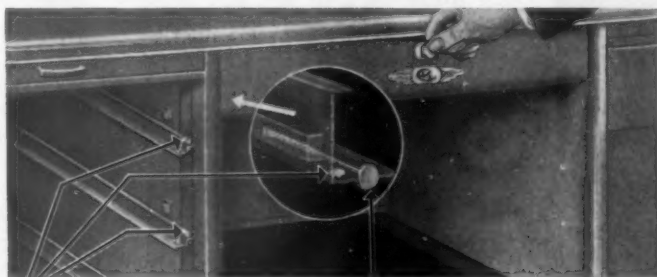


**"Y and E"**  
QUALITY

## Here's an X-ray look into the **easiest** operating desk you can buy

This new "Y and E" desk keeps its handsome, accepted style—but 20 engineering changes make it the most adaptable, easy-to-use desk you can buy.

New  
ease of  
operation



**1. New Nylon Stationary Bearings** glide drawers quietly in and out with effortless ease.

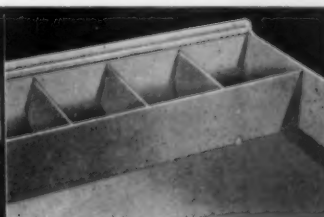
**2. New Effortless Locking**—new spring and locking mechanism give easy and positive locking and unlocking.



**3. New Sliding Reference Shelf** is reversible, can be used as utility drawer. Glass insert or pin tray is available.



**4. New Drawer Stop**, spring controlled, positive action—drawer removal simplified.



**5. New Roomier Utility Tray** for more convenient storage. All compartments full height of drawer—no spillage.



**6. Choose either Recessed or Flush Back** on original equipment. Can be easily changed from one to the other at any time.

For complete information on how these new desks can benefit your company, please write for free brochure No. 3808.

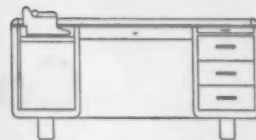
**YAWMAN AND ERBE MFG. CO.**

1060 JAY STREET, ROCHESTER 3, N. Y., U. S. A.

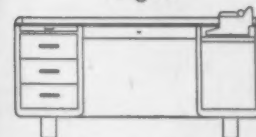
For More Information Circle No. 212 on Inquiry Card—Page 17

### New Flexibility

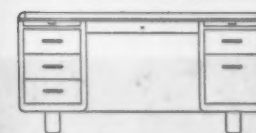
*Same desk adapts  
for different uses*



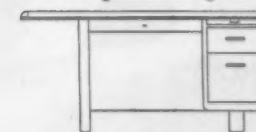
Reverse pedestal  
to get:



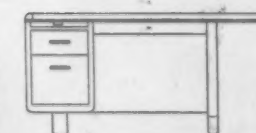
Replace typewriter  
pedestal with drawer  
pedestal to get:



Replace pedestal with  
end panel to get:



Reverse pedestal and  
end panel to get:



You can meet many changing needs through rearrangement of original parts. By stocking a few spare parts you can quickly and easily change this new desk to almost any model.

Nationally distributed through  
branches, agents, and dealers.

# Copying Equipment for Every Office Need

By G. H. Gutekunst, Jr.



The "Thermo-Fax" copying machine, Minnesota Mining & Manufacturing Co., uses infra-red rays to produce its exact reproduction of the original.

Since the end of World War II, one of the most fertile fields of development in the office equipment industry has been in the manufacture of copying equipment. For many years, the copying of business documents was handled mainly by typing copies of the original or sending the original to outside sources for photo reproductions. Some companies, to be sure, did install their own copying departments. But, the type of equipment and its cost, made such an installation quite difficult for any organization that did not fall into the category of a large company.

The post-war drive to streamline office procedure, with its resultant economy and greater efficiency, exposed the long-felt need for cheaper, easier to use and more applicable copying methods and equipment. This has been accomplished so that, today, the prospective buyer

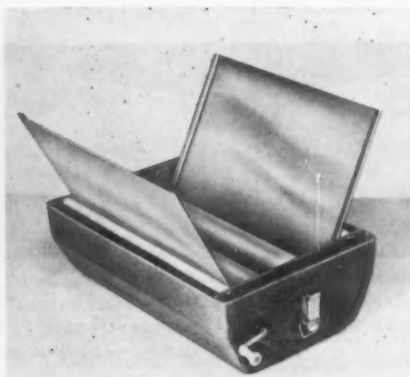
has a variety of highly efficient machines to choose from. And, to make his choice even more advantageous from his company's standpoint, the prospect can select equipment from four distinct processes to be sure that his final selection is the best for his company's needs.

In talking about this field of copying machines, it is most important to consider the equipment according to the process used. So, we shall discuss them as follows; diazo, photographic processes, thermal methods and xerography.

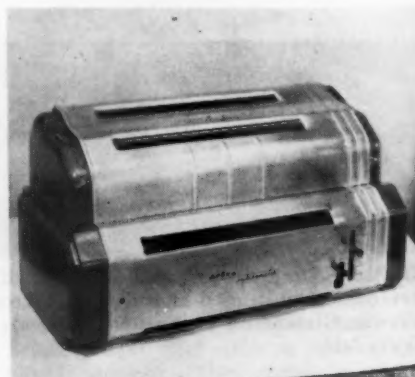
**Diazo.** This method is a modification of the long-standing blue-print techniques. Equipment in this class produce positive copies from positive originals and can also make color-coded copies. The first requirement for copying on this type of machine is that the original material be on one side of a translucent material. The copy is made by



The Oxalid "Bambino" is a small, desk top copying machine that uses the diazo process without requiring outside venting.



This portable "Constat" developer, made by F. G. Ludwig Inc., is part of the copying team which includes the "Contoura" printer.



The "Systematic Auto-Stat" of American Photocopy Equipment Co., can produce color-coded copies by putting dye in the developing unit.



The Remington Rand "Transcopy Duplex" is a combination printer-processor using the transfer process.



The "Verifax" process of copying, developed by Eastman Kodak Co., can produce three copies per minute on almost any kind of paper.



This "Copyflex" Model 14 of Charles Bruning Co., Inc. is made to stand beside an office desk and turn out almost any type of office forms. It is a diazo-type machine.

placing the original and a sensitized copying material together for exposure to actinic rays, that is rays from the short end of the spectrum. The final step is the completion of the chemical reaction by exposing the material to ammonia vapors. (In the case of equipment made by Charles Bruning Co., Inc. this reaction is handled by a liquid rather than a vapor.) This equipment makes exact size copies of anything written, drawn or photographed as long as the original is translucent. Manufacturers in this field are Charles Bruning Co., Inc.; Ozalid Division, General Aniline & Film Corp.; and C. F. Pease Co.

The Bruning machines, called "Copyflex", are available in eight different models. The smallest one, Model 14, is a desk-side copier that will reproduce practically any size office form. The other models, being of larger size, are more applicable

to copying of engineering drawings and large volume office paperwork. They require no special installation other than an available electrical outlet. Cost of reproduction, according to the manufacturer, is about two cents per square foot.

Ozalid machines come in three models. The smallest one, the "Bambino", is the only one that does not require outside venting to disperse ammonia fumes. The machine is about the size of an electric typewriter and has a maximum feeding width of nine inches. Ozalid claims that the "Bambino" will produce up to 200 letter-size copies per hour at a cost of 1½ cents per copy. The other two machines, the "Ozomatic" and "Streamliner", will handle copy up to 16 inches wide and 42 inches wide respectively. The "Ozomatic" is a table-top machine while the "Streamliner" requires a floor installation. These

two machines are generally rated for large scale work or large volume output of smaller material.

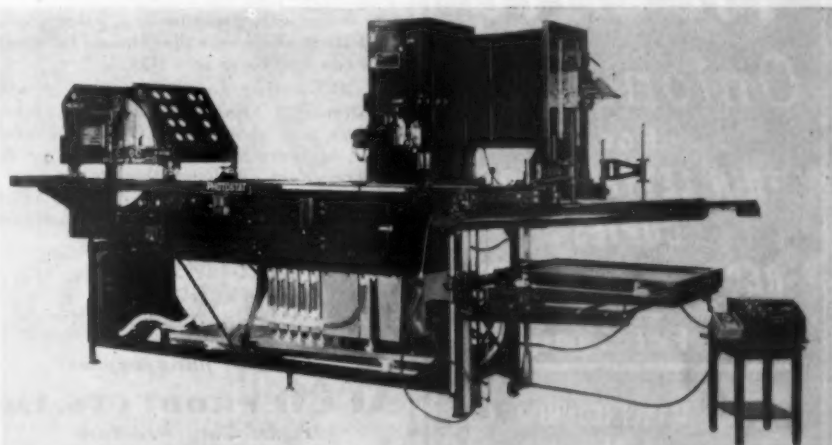
Machines made by C. F. Pease Co. are all floor models, requiring outside venting. Its "Zephyr" model handles copy up to 42 inches wide. Pease "Pacemaker" models are for material 42 inches wide or 54 inches wide.

Photographic Processes. We have used the plural here because this category consists of two classes. Most machines are of the direct process class while two manufacturers handle photocopy machines that use a camera and regular liquid developers. Both classes, however, work on the basic principles of photography. In other words, a print is made by using the original and a sensitized copy sheet for exposure to high wattage lights. The

(Please turn to page 185)



This flat-bed printer is a companion piece to copying equipment made by Peerless Photo Products, Inc. It can be used to copy bound books and magazines.



This equipment of Photostat Corp. can enlarge, reduce or make same-size copies easily and rapidly. Developing unit is an integral part of the machine.

## THE SUGGESTION BOX . . . by Ajax



"Do we have anyone named Ajax?"

Complete drinking water service, including AJAX or AERO Paper Cups and dispensers, improves employee morale because it provides clean, sanitary, comfortable and

natural drinking facilities . . . cuts down absenteeism because it reduces the hazard of transmitted infection. Eight out of ten people prefer it. Ask your paper merchant.

**AJAX® PAPER CUPS DISPENSERS CUP FILLERS**

**UNITED STATES ENVELOPE COMPANY**



General Offices: Springfield 2, Mass.

15 DIVISIONS FROM COAST TO COAST

For More Information Circle No. 213 on Inquiry Card—Page 17



AJAX® CUPS



AERO® CUPS

Also COLUMBIAN and PEERLESS Flat Cups

It pays to deal with the distributor who carries the complete line of paper water drinking cups. C1-M

A device for moistening and applying stamps has been announced by Dispens-A-Label Devices, Pittsburgh. It is claimed to moisten and apply 100 stamps in 5 minutes. Stamps are broken



apart, placed in a rack, then individually slipped from the rack and moistened. The device can also seal 100 envelopes in 2 minutes and can be used for stickers, labels and as a finger moistener.

Circle No. 90 on Inquiry Card—Page 17

Librascope, Inc., Glendale, Calif., a subsidiary of General Precision Equipment Corp., has acquired the Minnesota Electronics Corp., St. Paul, Minn., manufacturers of digital computers and components.

Circle No. 91 on Inquiry Card—Page 17

Two new executives have just joined the newly opened eastern sales and service staff of Dupli-Voice Co., Inc., Algonquin, Ill. They are Ed C. Inglis, new sales vice president, and Howard C. Strand, assistant sales manager. The eastern office is located in New York City.

Circle No. 92 on Inquiry Card—Page 17

Charles R. Saggau has been named sales manager of the Office Chair Cushion Division, American Latex Products Corp., Hawthorne, Calif. American Latex is a subsidiary of Dayton Rubber Co., Dayton, Ohio.

Circle No. 93 on Inquiry Card—Page 17

Curtis-Young Corporation, New York City, is now marketing its S-54 Stand-By Copyholder. It is made in three



sizes; standard 9" high by 12" wide for typist use; and two sizes for accountants or legal use, one 16" high by 9" wide and the other 12" high by 16" wide. The copyholder tilts to any angle for readability and folds flat for storage.

Circle No. 94 on Inquiry Card—Page 17

**ESLEECK**

*.. Thin Papers ..*

Reduce  
TYPING, MAILING  
and FILING COSTS.

Use  
**Fidelity  
Onion Skin**

For  
**THIN LETTERHEADS  
COPIES  
RECORDS FORMS**

Send For Samples

ESLEECK MANUFACTURING CO.  
Turners Falls, Mass.

For More Information Circle No. 214  
on Inquiry Card—Page 17



### SHIFT The Responsibility to ACCO!

Let ACCO Fasteners and ACCOBIND FOLDERS take the responsibility of your paper-keeping, paper-finding. Filed papers will always be where they should be, where you can find them in a jiffy.

ACCO-binding does away forever with "scatteration filing"—loose papers, messy folders, lost sheets. ACCO-binding saves time, tempers and money. It can be the difference in efficiency that spells profit. Remember...AN ACCO BOUND PAPER IS A SAFE PAPER. Ask your stationer.

ACCOBIND folders

ACCOMPRESS binders

PIN-PRONG binders

(for marginal multiple punched forms)

ACCO punches

and other filing supplies

**ACCO PRODUCTS, Inc.**

Ogdensburg, New York

In Canada: ACCO Canadian Co., Ltd., Toronto

For More Information Circle No. 215  
on Inquiry Card—Page 17

Extra - translucent, extra - durable **contact paper** designed to give faster print back speeds when diazo or blue-print reproductions are made, has been announced by **Eastman Kodak Co., Rochester, N. Y.** The paper, Kodagraph Contact Paper Translucent, permits the erasure of photographic lines with an ordinary pencil eraser after moistening slightly. It is offered in all standard Kodagraph Contact Paper sizes.

Circle No. 95 on Inquiry Card—Page 17

**Luxo Lamp Corporation, Tuckahoe, N. Y.**, has announced a wall-mounted, triple extension arm, **lamp**. A flexing arrangement provides a fixed, free-swinging horizontal member (out from the wall), joined to two medium length extension arms. Lamp has a 60" radius. Circle No. 96 on Inquiry Card—Page 17

**Talk-A-Phone Co., Chicago**, has announced a master selective system with ten times the volume of conventional **intercom** systems. Two models, one with five substation capacity and the other



with ten, provide ample volume for paging all positions in the intercom system. The additional master selective system, which operates on AC current only, is designed for covering large areas, either indoors or on docks, yards or other open areas, or where high noise levels drown out ordinary intercom facilities. The master station can talk and listen to any one substation or all simultaneously. Only the master station plugs into an electrical outlet. Circle No. 97 on Inquiry Card—Page 17

Uniform and rapid penetration of the ultra violet rays of direct print machines is claimed by the **Paterson Parchment Paper Co., Bristol, Pa.**, for its **whiteprint master sheet**. Called Patapar Translucent Parchment, it is available in two weights.

Circle No. 98 on Inquiry Card—Page 17

Considerable savings in space and weight are claimed for a new thin-base **photographic copy paper** produced by **E. I. Du Pont de Nemours & Co., Wilmington, Del.** Made of 100% rag stock, it is known as Photo-Writ W. Although thinner than Du Pont's standard weight Photo-Writ B—.0035" to .0055"—the paper is stronger than surface B, wet or dry. It is available in the same sizes as surface B.

Circle No. 99 on Inquiry Card—Page 17  
(Please turn to page 189)

## THE PEN THAT FILLS ITSELF

WRITES A FULL PAGE OR MORE AT EACH FILLING

TO SELECT OR REPLACE HERE'S ALL YOU DO

Finger grip never touches ink. No chance for ink to touch you.

"Ink-Locked" against accidental spillage. Can't leak. Won't flood. Easy to clean as a saucer.

CHOOSE the right Point for the way you write — by number.

Holds 40 times more ink than ordinary fountain pens. Needs ink only 4 times a year in normal use.

More than 28 interchangeable and renewable point styles.



# Esterbrook®

## DESK PEN SETS

THE ESTERBROOK PEN COMPANY, CAMDEN 1, NEW JERSEY  
THE ESTERBROOK PEN COMPANY OF CANADA, LTD.  
92 FLEET STREET, EAST, TORONTO, ONTARIO

COPYRIGHT 1954 THE ESTERBROOK PEN COMPANY

For More Information Circle No. 216 on Inquiry Card—Page 17

# Columbia SILK GAUZE TYPEWRITER RIBBON



From all over the country come reports of unmatched writing performance like these:

## Secretary to a budget engineer:

"Silk Gauze outwears by three times any ribbon previously used."

## Department Store Executive:

"Never found a ribbon that gives the service Silk Gauze does."

## City Supervisor:

"Silk Gauze is definitely superior."

Lint free pure silk and an exclusive fluid inking process are combined to give Silk Gauze Ribbons their exceptional durability and exquisitely fine impression. Here's the ribbon for the executive secretary, or for anyone who wants sharp, clean, beautiful typing.

Your local Columbia Ribbon and Carbon dealer will be glad to show you that Silk Gauze Ribbons, because of their quality, are an economical buy. Why not phone him now? Also, we'd like to send you a free copy of the Columbia illustrated reference book for ribbon and carbon users.



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For More Information Circle No. 217  
on Inquiry Card—Page 17

## Steps Toward Office Mechanization Outlined at AMA Meeting in N. Y. C.

High-speed electronic computing for the solution of complex office problems is growing more important in today's trend of industrial diversification and record-breaking production. However, the installation of "electronic brains" without proper procedures preparation can be a costly mistake. As a transitional means, many companies are using "common-language" business machines to lay the groundwork for future electronic programs. Punched card and tape equipment—converters, interpreters, calculators, typewriters, etc.—are being used to form a basic code and work flow for future conversion to fully automatic data processing.

### Integrating the Office

In a demonstration to American business and industry of what one company has done to prepare for office mechanization, the American Management Association held a special conference in New York City, recently, on "Integrating the Office for Electronics". Paramount among the conclusions reached at the two-day conference was that if business is to make the most efficient use of electronic knowledge, completely new concepts of data processing will be required.

The United States Steel Corporation, which devised a system and put it in operation in its headquarters last spring, was invited by the A.M.A. to describe its integrated data processing. H. F. van Gorder, director, methods planning division, U. S. Steel Corp., and his staff outlined the systems which has been developed over the past seven years.

This was the first time that the philosophy and detailed operation of the U. S. Steel program had been described to a national audience. The basic concept of it is to make all data self-perpetuating and thus eliminate the necessity for copying. Data are recorded at the point of origin on a five-channel punched tape, and subsequent processing—link typewriters, calculators, and electronic machines—is automatic. The U. S. Steel program has applications for any company whose data processing involves repetitive operations, even if it has a few as 350 employees.

"Our business, in common with many others, required the recording

and processing of data pertinent to the procurement, manufacture and sale of our products", Mr. van Gorder said. "It also requires that complete and significant information be currently available to all levels of management. These requirements are increasing in volume and complexity.

"At a first glance, it would appear that adequate systems design, conformance to schedules and mechanization would solve the problem. Closer scrutiny revealed that this was being accomplished in specific areas, but lacked integration between various phases, locations and applications," he continued.

It was then demonstrated how U. S. Steel uses ordinary available office machines, of a compatible nature, to process its raw data. Using the five-channel punched tape, U. S. Steel has applied the flexibility of production recorders, adding machines, bookkeeping machines, typewriters, calculators, tape-to-card punches, card-to-tape punches, and high-speed data-processing equipment to the same code.

### Common-language Link

The punched tape is called "the common-language link" between original data and subsequent data processing.

"Our concept of utilizing this common language is: 1. Record data at the point of origin on office machines which create punched tapes or cards as the automatic by-product of the recording operation." Mr. van Gorder pointed out. "And, 2. Process original and subsequent data on office machines which read and punch tapes or cards. Thus, all data are self-perpetuating."

To highlight the points of the U. S. Steel program, thirty machines supplied by nine manufacturers were shown in operation by one of the largest and longest closed-circuit television demonstrations. For the sake of clarity and continuity, the machine demonstration was confined to sales clerical processes—from recording of original data at the point of sale to collection of receivables and sales analysis. These operations were selected because of their adaptability to the clerical aspects of production, purchasing and other functions in all types of industry.

## Copying Equipment for Every Office Need

(Continued from page 181)

final process is merely the chemical reaction of a liquid processor converting the exposed "salts" into blacks and whites (except Eastman Kodak Verifax process). These machines vary in that some produce a master first and require repeat steps to produce the positive. However, they will produce anything written, drawn or photographed—including books for some models. Originals printed on both sides can be copied and any material, opaque, translucent or transparent can be copied. Some machines can produce color-coded copies.



General Photo Products Co., Inc., makes this "Exact-Photo-Copy" "dry" processing unit.

The two companies that manufacture camera-type photocopiers are Photostat Corp. and Remington Rand Inc.

The various models of Photostat machines consist of a large camera with a magazine for holding a roll of sensitized photographic paper and compartments for developing and fixing the prints inside the apparatus. A white on black or reverse print (not a true negative as a prism attachment prevents reversal of original text) is made first and true positives are prepared from this "master" if so desired. A "Junior" model is about the size of a desk and will handle material up to 8½ x 11 inches.

Remington Rand's "Dexigraph" photocopier, although large size, is equipped with rubber casters for movement as a point-of-use copier. It, too, is a self contained unit in that processing is done in compartments inside the equipment.

The equipment mentioned above are the only ones in the photo copying process that will reduce or enlarge as well as make exact same-size copies.

Direct process developers are sometimes referred to as "dry process" machines because the finished

(Please turn to page 186)

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wasting



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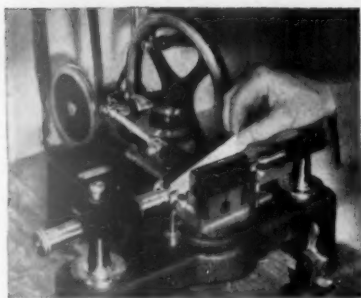
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For More Information Circle No. 218 on Inquiry Card—Page 17



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Two envelopes may look alike at first glance, yet be quite different in strength, color, opacity, surface, precise folding, smooth gumming, safe sealing, accurate count, sturdy packaging. . . . A fault anywhere along the line can cause trouble for you.

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The world's largest manufacturer of envelopes, and your envelope supplier. Ask for the *complete* story: the "Handbook" which tells **HOW** and **WHAT**; and the book "What's in it for me?" which tells **WHY**. Together they reveal *what's in it for you*.

**UNITED STATES**  **ENVELOPE COMPANY** Springfield 2, Massachusetts

15 Divisions from Coast to Coast

For More Information Circle No. 219 on Inquiry Card—Page 17

(Continued from page 185)

copies are delivered just slightly damp. They do, however, use a liquid developer inside the machine but by passing the copy through rollers, most of the liquid is removed before delivery. Manufacturers of this equipment are; American Photo copy Equipment Co.; Anken Film Co., Inc.; Copease Co.; Copy-Craft, Inc.; Duplomat Co. of America; Eastman Kodak Co.; General Photo Products Co., Inc.; Hunter Photo-Copyist, Inc.; F. G. Ludwig, Inc.; Peerless Photo Products, Inc.; Photostat Corp.; and Remington Rand Inc.



"Photorapid" equipment, made by Copy-Craft Inc., uses separate printer (left) and developer (right).

American Photocopy, or Apeco, makes several models for various uses. Its "Systematic Auto-Stat" is a complete unit for making both the reversed master and the final exact positive. It's about the size of a typewriter and contains its own processing tank. The Apeco "Auto-Stat" is a portable processing unit for separate contact printers. The "Systematic Copier" and "Auto-Stat Copier" are electric exposure printers which require separate processing units. Apeco copies can be color-coded by inserting special dyes in with the processing liquid.

The Anken "Processor" is a unit for use with printers or other means of exposing the original and Anken sensitized paper together. The unit will produce either positive or reverse prints depending on exposure methods used.

The Copease "Duplex Photocopier" is known throughout Europe as the "Develop Combi". It was originally developed in Stuttgart, Germany. It is of non-metallic construction except where necessary for working parts and has its developing unit at the bottom to prevent fluid from inadvertently reaching working parts. The machine mentioned is electrically operated and is a printer and developer. The "Develop", processing only, is available in either electric or hand operated models for use with contact printers. The "Unikop" is an exposing unit only and is specifically designed for coping pages of books. Another machine, the "Duokop", is used for making transparencies for diazo prints.

Copy-Craft's "Photorapid" is also

a combination printer and processor. It makes single side copies, double side copies, transparent copies for diazo, and tissue and air mail copies. Other models are available for copying books and texts.

The Diplomat Co. of America produces two combination units—the "Diplomat-Ultra", for copies 14 inches wide, and the "Duplo-Record", for copies 9 inches wide. The company also produces the "Diplomat-Junior", in hand or electric models, for use with contact printers and the company's portable "Photo-Printer" for copying bound books and magazines.

While we have included Eastman Kodak's "Verifax" copier in with transfer and direct process machines, it is, in a way, a separate category. However, it does work on the basic principles of photo copying. Actually, this machine will make up to three prints from a single master in approximately one minute. It uses the reflex method of exposure, that is reflecting the image back onto the sensitized paper.



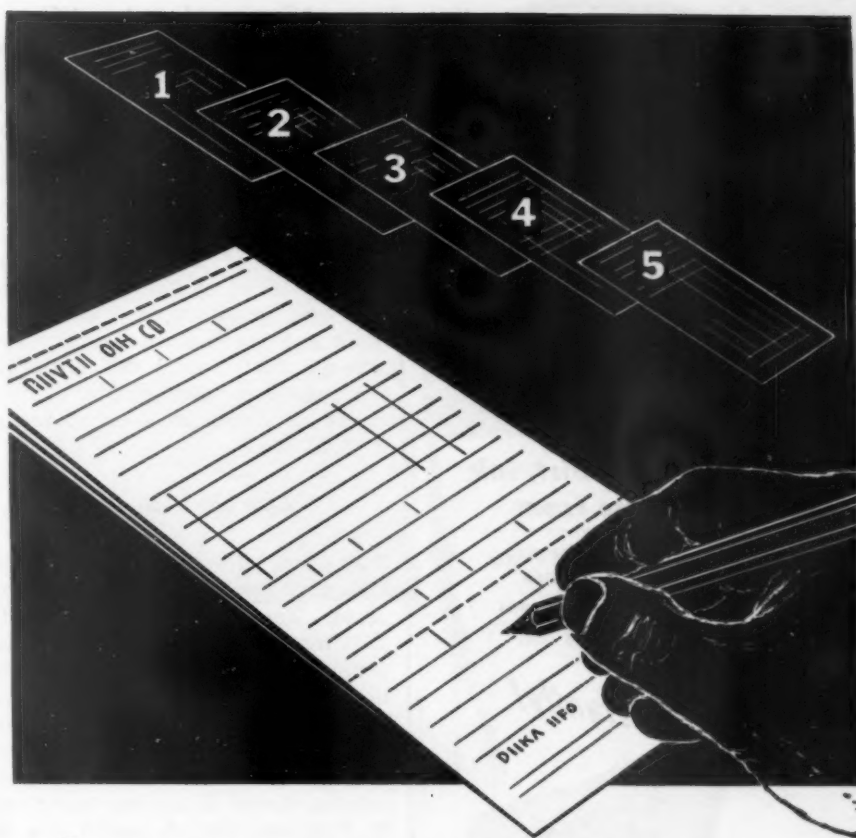
The Copease Company's "Duplex Photo-copier" is a single unit machine with processing tank at the bottom. It is called "Develop Combi" in Europe, where it was developed.

Development of the matrix, or master, causes a reaction which permits a "transfer" of the printed matter onto other special papers or even a number of plain commercial papers that are normally available in the office. It is a combination printer and processor and can readily handle bound volumes. The copies cost less than five cents apiece.

The "Exact-Photo-Copy" produced by General Photo Products is a plastic exterior, stainless steel interior combination printer-developer. It is rated at 60 to 90 copies per hour, letter size, at a cost of eight cents per copy. It is a straight transfer processor.

F. G. Ludwig produces a two unit copier called "Contoura-Constat".

(Please turn to page 188)



## 1 Baltimore Business Form takes the place of 5

Recently, a large retail chain had a costly problem. They handled five different types of sales, with five different forms, each of which had to be followed through multiple operations.

Management discussed their problem with Baltimore Business Form experts. Together they designed and produced one Form—readily adaptable to other types of stores—that could be used for all sales, and could be easily followed through all voucher processing. Result: Time and money saved in both selling and office operations.

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For More Information Circle No. 220 on Inquiry Card—Page 17

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For More Information Circle No. 221  
on Inquiry Card—Page 17

(Continued from page 187)

The "Contoura" is a portable copier that was designed for use with any processing equipment. It is planned, specifically, for copying large bound volumes. The "Constat" is the companion "dry" processor developed as portable addition to form the "Contoura - Constat" combination. Portability of the developing unit is heightened by the ease of loading and unloading the developing tank and the inclusion of a plastic storage bottle with the unit. The equipment appears on the General Service Administration schedule #18-M-410.

### Combination Unit

Peerless Photo Products also makes a combination printer-processor known as the "Dri-Stat". This machine will handle copy material up to 12 inches wide. In addition the company makes a "Dri-Stat Flat-Bed Printer" for preparing sensitive exposure for wet or "dry" developing. Two models of processors, A and B, are also marketed by Peerless. The A model has its motor unit separate while the B model uses a built-in drive.

The Photostat "Instant Copier" makes use of Eastman Kodak's "Verifax" method of copying.

"Transcopy" and "Transcopy Duplex" are the two units produced by Remington Rand. The "Transcopy" is the processing unit for use with the company's "Portagraph" contact printer or any similar printer. The "Transcopy Duplex" is a combination printer and "dry" processor that will handle material up to 14 inches wide.

In the thermal, or heat process, there is the "Thermo-Fax" copier produced by Minnesota Mining and Manufacturing Co. This machine works on the principle that black or dark colors absorb more heat than white or light colors. A waxy-surfaced copying paper, sensitive to heat, is placed into the machine with the original and exposed to infra-red rays. The absorption or dispersion of heat by the original reacts with the heat sensitive copy paper to make a true copy of the original material. Translucent or transparent, as well as opaque, originals can be copied. A maximum exposure of 12 seconds is controlled by automatic timers and a circuit breaker. The machine is a floor-type piece of equipment and uses no processors other than the infra-red rays. It operates on standard electric current.

Xerography makes use of magnetism and electrical charges to prepare copies. This equipment, made by the Haloid Co., consists of a camera, a processor and a fuser. A plate coated with a positive electrical charge is inserted in the camera and exposed to the material to be copied. The light entering the camera, instead of reacting chemically, "erases" the positive electrical charges except where dark areas appear on the original. The plate then goes into the processor where a negatively charge black powder is attracted to the positive lines on the plate. A final insertion in the fuser permanently fixes the powder to the surface by heat. This equipment cannot be purchased but is available on a rental basis from Haloid.



The Anken Film Co., Inc., makes this processor for use with any contact printer.

As you can see, there are many possible applications for many of these copying machines. Generally speaking, they are economical for the making of one to 20 copies. Diazo machines, most of which are large or require outside venting are usually considered to produce copies for about 1½ cents. Photocopiers, which require around 1 or 2 minutes to produce a copy, usually will handle reproductions for around 9 cents. (Verifax produces three copies per minute—single copies around 9 cents, in runs of three, 4 cents.) The thermal process makes about 4 copies a minute and costs around 5 cents per copy. Xerography takes between 2 and 3 minutes per copy at a cost of nearly 9 cents each. These figures, of course, are arbitrary and depend a great deal on the work the machine is put to, its hours of use, etc.

However, in comparing these machines and their costs with the horse and buggy methods of hand copying, the economy is far more evident than in just the cost of producing a copy on the machine. Time, too, is money. And, if these machines can

eliminate through their automatic and semi-automatic operation with unskilled or "amateur" operators, their value is considerably increased when compared with the cost of putting a good typist to work in hand producing copies.

#### Inexpensive to Operate

Many of these machines are comparatively inexpensive to buy and to operate. How much they can save in the long run, is up to you to decide. But, if you do any degree of copy work in your organization, remember the old saying—"Watch the pennies and the dollars will take care of themselves."

(Continued from page 183)

**Nekoosa-Edwards Paper Co., Port Edwards, Wis.,** has released a folder on the advantages of its Nekoosa Bond paper.



**OTA Business Machines Division, Oerlikon Tool & Arms Corp. of America, Asheville, N. C.,** recently introduced its Vanguard dictating machine. A magnetic type unit, it uses the Master-Magic dictating sheet of sensitized paper the same size as ordinary letterheads, 8½" x 11". The sheet can be used over and over, as many as 2,000 times. Automatic erasing permits running back for correction. Both the dictating and transcribing units are equipped with a loud speaker in addition to the microphone and ear piece. Circle No. 100 on Inquiry Card—Page 17

**Additional information on these latest developments in the office equipment field can be obtained by using the reader service postcard on page 17. Just circle the corresponding numbers and complete information will be forwarded to you.**

#### Prominent Users of Strathmore Letterhead Papers: No. 110 of a Series



The famous Matson liner, S.S. LURLINE, enters Honolulu harbor where traditional Aloha greetings await.

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Closely linked with the development of Hawaii as a vacationland supreme have been the more than seventy years of services by Matson lines in making an Island vacation the dream... and the possibility... of a host of travelers. Matson's luxury liner... the S.S. LURLINE... has become so identified with the life of the Islands that its arrival on "Boat Day" is a near-holiday. Matson's trio of hotels on the beach at Waikiki... the Royal Hawaiian, the SurfRider and the Moana... round out a service to Hawaii's visitors that has made Matson a name famous and familiar to all.

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Let your correspondence go places with Strathmore! Every contact you make through the mails can be made extraordinarily expressive with the matchless quality of these papers. Have your supplier show you some sample letterheads on Strathmore. See what a difference the look and the feel of these papers makes!

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# STRATHMORE

MAKERS OF FINE PAPERS

Strathmore Paper Company, West Springfield, Massachusetts

For More Information Circle No. 222 on Inquiry Card—Page 17

# AMONG THE Associations



## Sales Execs., PA's Air Pet Peeves at Milwaukee Meeting

More than 650 members of the Milwaukee Sales Executives Club and the Milwaukee Association of Purchasing Agents met together for a joint discussion of mutual problems, the airing of "pet peeves", and the development of better business relations built on mutual understanding.

William J. Grede, President of Grede Foundries, Inc., served as moderator of the panel, which included representatives of both salesmen and purchasing agents. Participating in the discussion were: Roy Anderson, P.A., Harnischfeger Corp.; Harold J. Jungbluth, P.A., Oilgear Co.; Burbank Murray, P.A., Trackson Corp.; Elmer B. Kapke, Industrial Sales Mgr., Socony-Vacuum Oil Co.; Jack P. Henry, Asst. Gen. Sales Mgr., Ampco Metal, Inc.; and Roy E. Hanson, Sales V. P., Milprint, Inc.

Among the topics touched upon were back-door selling, restricted calling hours, overlong waiting time before gaining an interview, gifts to purchasing agents, and the reasons why a salesman who expects the buyer to make firm decisions always has to check his home office.

Typical comments:

**Mr. Anderson:** "The purchasing agent who blocks a salesman because he is convinced the product his firm is now using is the best, should not be a purchasing agent. On the other hand, the salesman should know enough about his product to convince the buyer that he can offer a better deal."

**Mr. Kapke:** "Salesmen would stop back door selling if they really knew that purchasing agents did all the buying, but there apparently are others we have to see in order to

(Please turn to page 200)



Walter Armstrong



John Ward

## 1954 Convention Chairmen See Outstanding Meeting

The final plans for the N.A.P.A. convention to be held at the Conrad Hilton Hotel, Chicago, May 24-26, are now being crystalized according to Walter Armstrong, general chairman of the 1954 convention. Mr. Armstrong, who is director of purchases, American National Bank and Trust Co., Chicago, states that indications point to a record turnout for the '54 meetings.

Working closely with Mr. Armstrong is John Ward, purchasing agent for the City of Chicago. Well known in N.A.P.A. and NIGP circles, Mr. Ward has taken on the duties of convention program chairman. He has stated that everything is being done to assure an outstanding list of select speakers to address the convention sessions. Both Mr. Armstrong and Mr. Ward are confident that the 1954 N.A.P.A. Convention will go down in the National Associations history as one of the biggest and best gatherings the members have ever had the opportunity to see and attend.



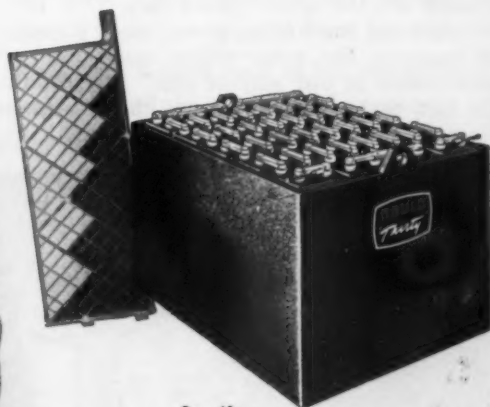
Panel members of Milwaukee's joint meeting of sales executives and purchasing agents discussed mutual problems and aired "pet peeves". Left to right; Roy E. Hanson, Milprint, Inc.; Jack P. Henry, Ampco Metal, Inc.; Elmer B. Kapke, Socony Vacuum Oil Co.; William J. Grede, Grede Foundries, Inc., moderator; Harold J. Jungbluth, Oilgear Co.; Roy Anderson, Harnischfeger Corp. and Burbank Murray, Trackson Corp.



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For More Information Circle No. 223 on Inquiry Card—Page 17

# Record Attendance at New York Purchasing-Sales Meeting

John A. Hill, president of Air Reduction Company, was principal speaker at another "record attendance" Purchasing-Sales Dinner of the Purchasing Agents Association of New York on February 17. More than 1100 purchasing and sales executives jammed New York's Hotel Commodore ballroom to hear Mr. Hill's talk on "The New Partnership."



Air Reduction's John A. Hill.

Mr. Hill, whose talk "The Purchasing Revolution" was one of the highlights of last year's international N.A.P.A. convention, urged "the integration of the activities of procurement and marketing in a common purpose, the preservation and improvement of our way of life."

He said that a continuance of the

unprecedented standard of living we enjoy today depends largely on how well our steady accumulation of technical knowledge is disseminated throughout industry.

"It is apparent," he said, "that procurement and marketing are the dominant agencies responsible for the employment of technical knowledge in the actual production of goods and services."

He told the salesmen that the "take at the gate" was not the whole answer—that where the sales dollars go after they are captured determines net profit. He reminded them that purchasing is increasingly being considered a profit-making function which should report to a top level operating executive and be represented in top level councils.

The objective of the new partnership, according to Mr. Hill, is, "to see that the purchaser receives what will best serve his purpose at minimum cost to him consistent with a reasonable profit to the seller."

He told the purchasing agents that, if the seller is to perform his function of satisfying the buyer's needs to best advantage, there must be a greater exchange of information between buyer and seller than generally exists today.

Other speakers at the affair were Micheal D. MacBurney, president of the New York Association, and George A. Renard, executive secretary-treasurer of the National Association of Purchasing Agents.

Among the out-of-town guests at

the meeting were the following national directors of associations in District 8:

William R. Bovard, Wilmington; A. G. Randall, Elmira; John J. Raub, Lehigh Valley; A. J. Dickinson, Old Dominion; Frank E. Whyte, Buffalo; P. J. Coggeshall, Carolinas-Virginia; Charles F. Straney, Eastern New York; Hans Westkott, Reading; Spencer Covey, Washington, D.C.; and Wilson B. Wight, Rochester.

Alternate national directors, who were also guests, included: Raymond A. Cadarette, Baltimore; Edward G. Dobe, Buffalo; J. T. Holt, Carolinas-Virginia; Kenneth Gordnier, Eastern New York; R. E. Campbell, Elmira; Carl Reichard, Lehigh Valley; John Friend, Old Dominion; Donald R. Taylor, Phila-



Among the guests: (l to r.) Carl Reichard, Lehigh Valley; Ken Gordnier, Eastern New York; J. J. Raub, Lehigh Valley.

delphia; Edward H. Crews, Reading; William T. Naylor, Rochester; G. Willard Hoffman, Syracuse; Earl L. Johnson, Washington, D.C.; William A. Jackson, Wilmington.



District 8 Vice President Howard Ahl, Eastern New York National Director Chuck Straney, and N. Y. Association Treasurer Ed Fielis enjoying the pre-meeting reception. National Directors in the district were guests.



George Renard, M. D. MacBurney, President of the New York Association; Paul Farrell, Associate Editor of Purchasing, and Harold Macintosh, past Vice-President of District 8, in a refreshing mood.

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selling the  
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on **AMERICAN  
PHILLIPS  
SCREWS**"



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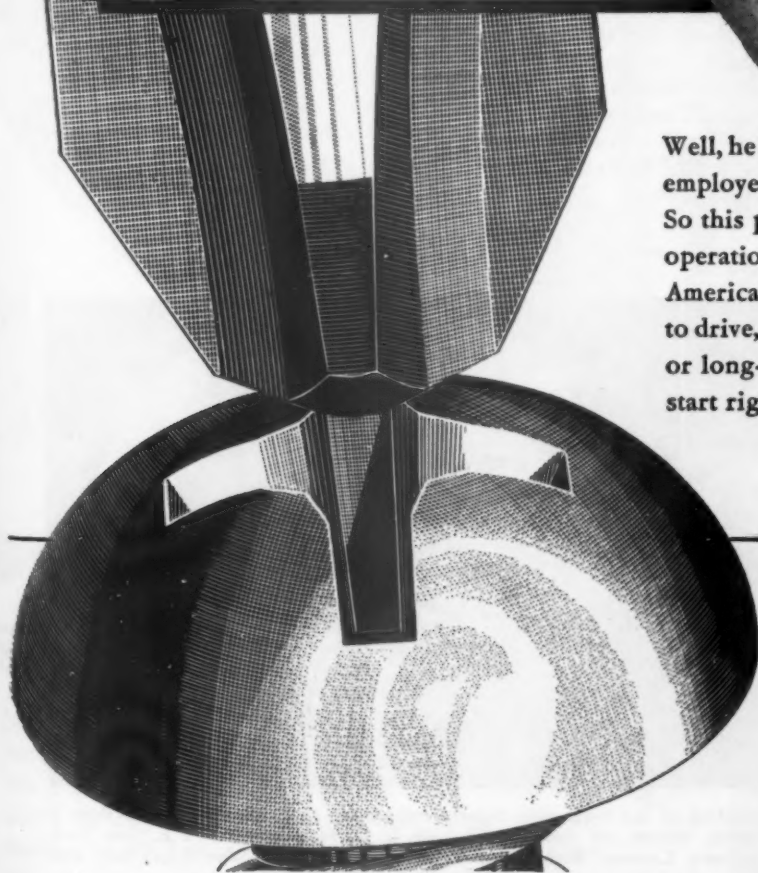
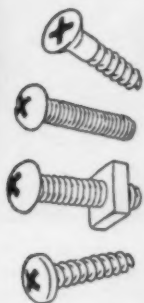


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Office, Detroit, Michigan





General Chairman George L. Wilson (left), checks over the program with speakers Jack Green and L. C. Highfill as President Carl Thomas stands by.



"Hospitality bars" were manned by 25 white-coated members of the Alabama Association to lend an "informal" atmosphere to the social hour preceding the dinner.

## Alabama Association Holds Annual Seller-Buyer Dinner

More than 700 sellers and buyers enjoyed an evening of entertainment and fun at the Seventh Annual Seller-Buyer Dinner sponsored by the Purchasing Agents Association of Alabama on February 11, 1954. A social hour started the proceedings as the PA's and their guests crowded into the Terrace Ballroom of the Tutwiler Hotel in Birmingham. After the hour of fellowship, the group moved to the hotel's main dining room for a delicious meal. After the dinner,

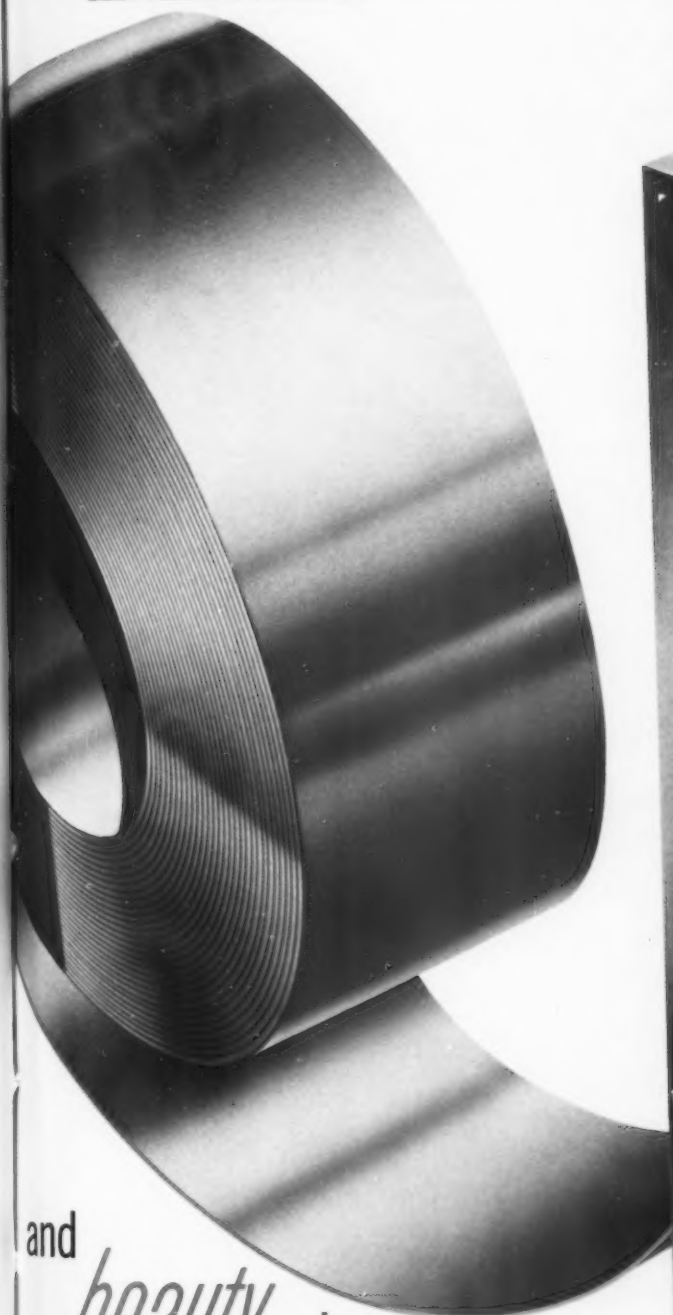
President Carl Thomas, opened the formal part of the program by introducing the guests at the head table, including the presidents of the salesmen's and sales executives clubs. George L. Wilson, general chairman of the affair, introduced the two speakers for the evening. Larry Highfill, representing the "buyers", spoke briefly on "Who's Kidding Whom?" and was followed by the "sellers" representative, Jack Green, with "A New Star on Management's Team". Tom Dix,

acting as master of ceremonies, took charge of the program to introduce the "1954 All-Star Floor Show". Larry Storch, one of America's leading comedians, gave a performance that will be long remembered. Rounding out the fine acts in the show were Gali Gali, with the fastest hands in the world, and Rondelle and Jerry, a very lovely girl with a dummy. The show, as well as the entire affair, was rated as one of the best ever put on.



**EXECUTIVES' NIGHT:** Twenty-third annual Executives Night meeting of the Purchasing Agents Association of Eastern New York drew a large crowd of members and guests to the DeWitt Clinton Hotel, Albany, on February 17. Left, S. C. Main chats with E. New York Treasurer W. C. Bryant, Jr., Clyde M. Wormer, and Secretary Duke Chesney. Right, Past Presidents Richard H. Van Laer, left, and Harold H. Frair, right, reminisce with Douglas H. Cornell. Story and additional photographs on page 218.

the *elements* lose...



and *beauty* wins

with storm-and-screen doors of

**SUPERIOR** *Type* 430  
**STAINLESS** strip steel

Lustrous, handsome, unaffected by exposure the year around, stainless steel storm-and-screen doors are the home-owner's perennial joy. • Built of Superior Type 430 Stainless Strip, these popular doors are the fabricator's delight as well, because our steel is made right, checked right, easy-handling at every step. Can we serve you?



**Superior Steel**  
CORPORATION  
CARNEGIE, PENNSYLVANIA

# 23rd Public Utility Buyers Conference Held in Baltimore

The 23rd annual Mid-Winter Conference of the Public Utility Buyers' Group, National Association of Purchasing Agents, was held in the Lord Baltimore Hotel, Baltimore, Md., on February 15 and 16.

Almost 160 attended this meeting, one of the largest ever held by the group. Theme of the conference was "1954—Year of Decision."

Opening the sessions, Group chairman W. H. Jones, Philadelphia Electric Company, declared that the "P.A. now has an opportunity to do a real buying job." He said there is a "real challenge" in the public utility field, particularly—since capital expense has almost doubled while rates have remained about the same in the past decade. Session chairman H. Nedwill Ramsey, Philadelphia Electric Co., said that in the current state of affairs "the purchasing agent has to be an engineer, an economist, a statistician, an accountant, and a diplomat." On top of all this, Mr. Ramsey, declared, he must have a sense of value.

Robert C. Swanton, Director of Purchases, Winchester Repeating Arms Co., New Haven, Conn., told the meeting that there might be "a slight reversal of the business downturn this quarter." He said that production cutbacks that began last fall when business started to ease had distorted the demand picture, particularly in steel and non-ferrous metals.

When industry's sales executives decide to lower their sights and call for only 10% less production in a certain period, Mr. Swanton pointed out, the move affects not only ware-

house stocks, but inventories in process, unworked inventories, and purchasing commitments. "The only thing a buyer can do when production is reduced is to cancel or defer

commitments—and we know that there has been more deferring than canceling in the past six months."

Mr. Swanton declared that purchasing men have not been "panicked" in the present situation, but rather have helped to keep the economic adjustment "orderly." "Let's help to keep it that way" he asked. "After all that is one of the reasons

(Please turn to page 204)

The "Ayes" of Texas are behind the announcement of the scene of the 1955 Conference.



Fred Bradley, First Vice Chairman; Harold T. Belcher, Secretary; and W. H. Jones, Chairman of the Public Utility Group before the meeting.



The Public Utility Buyers' Conference drew distinguished speakers and guests. At left are Past N.A.P.A. President Tom Jolly, M. E. Noyes, Bill Jones, Chairman of the Group, and Russ Wenz, Chairman of the N.A.P.A. Committee on Non-Ferrous Metals. Photograph at right shows part of the crowd at the opening session.



**The Small Arms Industry** requires a soft, absorbent wiper that can pick up metal chips and then be thrown away—so that carefully machined parts will not be scratched. Scott Wipers are the answer.



**The Candy Industry**, in particular, needs a clean, safe wiper. Scott Wipers are a natural for bakeries, dairies—any place where cleanliness is a must. Women employees, especially, like these wipers.



**The Electrical Equipment Industry** must have a versatile wiper. From dusting to cleaning-away heavy grease, Scott Industrial Wipers are equally adaptable for huge armatures or fragile condensers.

## To meet a human need...

**Scott Industrial Wipers bring a new standard of safety and efficiency to Industrial Wiping**



**The Hands of Production**—your most important tools—are protected by disposable Scott Wipers. Harmful metal chips and filings are thrown away along with the used wiper.



Scott Industrial Wipers—another Scott product that is changing America's way of doing things.

Today, all over the country, more and more companies are changing to this entirely different wiping material, the Scott Industrial Wiper.

Scott Wipers now make wiping a scientific step in production—measurable in terms of cost, safety and efficiency.

Wherever you use wiping materials now, try Scott Industrial Wipers. See if they don't do a better job. And they're excellent for wiping hands and face.

Most firms have found an on-the-job pilot installation to be the best way of proving the merits of Scott Industrial Wipers. A Scott man stands ready to demonstrate this in your plant.

Simply mail this coupon or call your local Scott distributor.

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Please send me full information on  
Scott Industrial Wipers

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

For More Information Circle No. 228 on Inquiry Card—Page 17

THREADED SPECIALTIES

# EYE BOLTS

by an  
exclusive method



Among Pawtucket's many specialty products, these lower-cost eye bolts or "swing" bolts are the leaders in this field. Pawtucket's exclusive production method keeps cost low, dimensional accuracy unusually high and strength above standard.

Pawtucket eye bolts are made in standard sizes 1/4" and larger, or to your specifications. In any size, you can depend on a uniform Class 3 fit.

BETTER BOLTS SINCE 1882

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"THE BOLT MAN"

MANUFACTURING COMPANY

327 Pine Street Pawtucket, R. I.

THE PLACE TO SOLVE YOUR BOLT PROBLEMS

T.M. REG.

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on Inquiry Card—Page 17

## Milwaukee Meeting

(Continued from page 190)

sell. . . Salesmen want the opportunity to study your needs, then be able to present our products and services uninterrupted to all interested parties in your plant."

Mr. Jungbluth: "Some salesmen would rather try a back window than an open front door. The p.a. who intentionally keeps a salesman waiting is very shortsighted. In the long run it only costs the buying firm more by wasting a salesman's time."

Mr. Henry: "If all companies established restricted buying hours, it would be detrimental to industry. Salesmen check with their home office to be sure that the order can be filled according to the conditions agreed upon."

Mr. Murray and Mr. Hanson: "Christmas and other gifts to purchasing agents have become a big problem, both to buyers and sellers. Industry should face this situation and adopt a uniform policy aimed at eliminating the practice."

1 1 1

## Ansley Guest Speaker at Chicago Women's Meeting

Leonard M. Ansley, Purchasing Agent for Inland Steel Container Co. and president of the Purchasing Agents Association of Chicago, was guest speaker at the February 11 meeting of the Women's Division. Miss Florence M. Hayes presided at the meeting. Members of the Board of Governors and officers of the Men's Division as well as past presidents of the Women's Division were special guests at this same meeting.

1 1 1

## 'Communism' Is Subject of New Orleans Meeting

Rev. Louis J. Twomey, S.J., director of the Institute of Industrial Relations and dean of Loyola University Law School, talked to the members of the Purchasing Agents Association of New Orleans on the effects of communism and its aims to overthrow all social and economic order. "Communism", said Father Twomey, "will be destroyed when we eliminate the causes which brought it on." Harmonious cooperation between management and labor is a step in the right direction, he pointed out. At the conclusion of the talk, the association welcomed Edward V. Peters of the New Orleans Public Service, as a new member.

# SOMETHING NEW!

SEE  
PAGE  
301



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on Inquiry Card—Page 17



## WHO PAYS FOR DEFECTIVE CASTINGS?

In steel castings, internal defects are often very costly to the buyer, because they usually don't show-up until considerable machining is done (with attendant labor expense). Generally speaking, foundry practice provides only for the replacement of defective castings, leaving the expense of machining to be borne by the customer. . . . Naturally, all foundries, at some time or other, turn out a bad casting—but choose one which is noted for its good castings, its cooperation, and its understanding of your problems. Choose Atlantic Steel Castings . . . producers of top quality castings since 1915.

Learn more about Atlantic in "Atlantic Axioms", our informative, interesting house organ. Write for it on your business letter-head, please.

**ATLANTIC**  
STEEL CASTINGS COMPANY

Sixth and Lloyd Streets Chester, Pa.  
Chester 3-4181

For More Information Circle No. 231  
on Inquiry Card—Page 17

PURCHASING

# GLOBE

specialization gives you  
"Tops in Quality"

## ALLOY STEEL TUBES

SEAMLESS — MECHANICAL — PRESSURE — CORROSION RESISTANT

### TYPICAL ANALYSES:

Carbon	5 Chrome 1/2 Moly
Carbon 1/2 Moly	7 Chrome 1/2 Moly
1/2 Chrome 1/2 Moly	8 Chrome 1/2 Moly
1 Chrome 1/2 Moly	8 Chrome 1 Moly
1 1/4 Chrome 1/2 Moly	9 Chrome 1 Moly
2 Chrome 1/2 Moly	3% Nickel 7% Nickel
2 1/4 Chrome 1 Moly	5% Nickel 9% Nickel

AISI Types: 304-321-347-316-309-310-405-410-430-443-446

Analyses to meet conditions where heat, corrosion, pressure and structural strength are involved.

### SIZE RANGE — WALL THICKNESS:

1/2 to 6 inches O.D. — wall thickness .035 to 1.000 inch.

### TYPICAL APPLICATIONS:



Globe engineers gladly give you the benefit of specialized knowledge of stainless steel tubing in a wide range of services and applications — to improve your product — to cut costs.



**TO BE SURE . . .  
SPECIFY GLOBE**

Pressure tubes — Superheater tubes — Condenser tubes — Still tubes — Evaporator tubes — Barrel tubes — Oil-well Pump Barrels — Mechanical tubes — Aircraft tubes — Propeller tubes — Rollers for Transmission Chains.

The heating, piercing, rolling of seamless tubes is controlled at every step for uniformity, close tolerance.



WHEN you specify Globe, you get uniform high quality alloy steel tubes, the product of highly developed production facilities and specialized quality controls and methods. All Globe tubes are thoroughly inspected and closely held within tolerance specifications. Write for the Globe general catalog.

## GLOBE STEEL TUBES CO.

Milwaukee 46, Wisconsin Chicago • Cleveland • Philadelphia • St. Louis • New York  
Detroit • Denver • Houston • San Francisco • Glendale, Cal.  
Producers of Globe seamless stainless steel tubes — Gloweld stainless steel tubes — alloy — carbon — seamless steel tubes — Globeiron (high purity ingot iron) seamless tubes — Globe Welding Fittings.

**Think of  
Perkins first  
and you can think  
of maintenance last!**

WHEN the functional efficiency of your product is largely dependent upon the effectiveness of its integral power transmission system, the quality of the gears you need to transmit power is the major consideration.

Through its entire 35 years of operation, Perkins has specialized in the production of gears to customers' specifications—any size, any quantity, metallic or non-metallic. Consequently, among consumers of custom-made gears, **PRECISION & PERKINS** are accepted as synonyms. For trouble-free power transmission, specify Perkins custom-made gears. Have us quote on your requirements!

**NOTE 1:** A new product is the Perkins Precision Spring Coiler. This coiler (patent applied for) turns out precision springs—any type, shape, size, from wire sizes .005 to .125.

**2:** Another new product—the Perkins "Bendit 15"—a patented metal forming machine bends and shapes sheets, rods; strips tubing into innumerable complex as well as simple forms that would be difficult or impossible to make by other means. Eliminates need for expensive tools or specialized skills. Ht. 47", net wt. 200 lbs. Write today for descriptive catalogs, prices etc.

**Perkins Machine & Gear Co.**  
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This is an aircraft engine gear custom-made by PERKINS.

**PERKINS ALSO MAKES:**

Helical Gears  
Bevel Gears  
Sprockets  
Ratchets  
Worm Gears  
Spiral Gears  
Spur Gears with  
shaved or ground teeth  
Ground Thread Worms

(Continued from page 196)  
we have purchasing agents."

He urged the utility buyers to keep these fundamental facts in mind as they face the new economic conditions of 1954:

A buyer's market is a normal state of affairs in American industry;

Many economic "sins" were developed during the war years and immediately following and we will be better off without them;

Competition is going to be sharper in the coming year than ever before. Mr. Swanton made special note of the inroads aluminum has made on copper in the utility field, and the over-all industrial progress of plastics.



Charley Wilson, session chairman, about to introduce a guest speaker.

The morning session of the first day ended with a panel discussion on the economic situation. Participants included: Fischer Black, editor of *Electrical World*; Kenneth Kramer, executive editor of *Business Week*; and H. W. Springborn, executive editor of *Gas Age*.

Charles F. Wilson, Lone Star Gas Company, Dallas, Tex., was chairman of the afternoon session. He introduced E. F. Andrews, president of the National Association of Purchasing Agents, whose topic was "The Husband of Necessity."

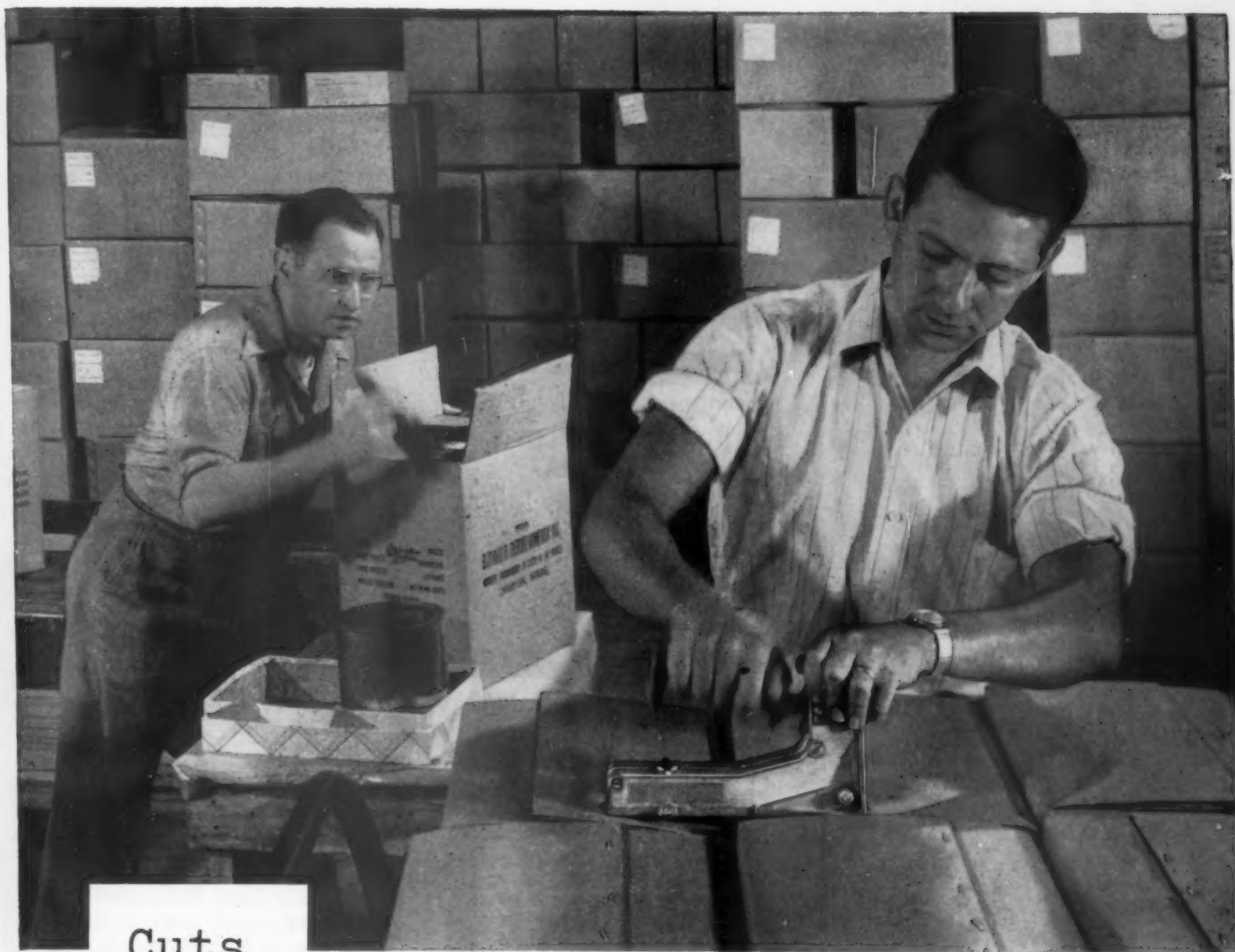
Col. Willard F. Rockwell, chairman of the board of the Rockwell Manufacturing Company, called for the formation of a United States of Europe by western European nations that would "end all fear of Russia." Col. Rockwell also described the havoc wrought by Socialism in France and Italy, and to a lesser degree in Great Britain.

In describing a possible union of European countries, he said "the resources of such a group would far exceed Russian resources and, consequently could produce far more

(Please turn to page 208)

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on Inquiry Card—Page 17→  
PURCHASING

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Cuts  
Costs  
70%

**Man with stapler beats  
man with glue 10 to 1**

This actual race took place in a rubber products plant. The man at left sealed cartons with glue. His companion used a Bostitch Autoclench Stapler, and averaged 10 times more cartons per hour. The manager happily reports savings of 70% in time and materials.

His shipping men are happy too. Gone are the gluepots, dripping brushes, spattered aprons. No more "glue-cake" on floor or hand truck. No "weighting" of sticky carton flaps. Cartons go off faster, cleaner, and can be re-used. And as the men are paid on piecework, take-home pay is bigger.

The Autoclench is just one of 800 kinds of Bostitch staplers that trim time and costs on thousands of different fastening jobs in factory and office. To help you fit the right stapler to the right job, Bostitch has 325 Economy Men working out of 123 cities in the U.S. and Canada—by far the largest and best trained group of its kind.

Check over your own fastening methods with your nearest Economy Man. There's no obligation. He'll be glad to tell you honestly whether stapling can save you money.

Look up "Bostitch" in your phone directory or write us.

**FASTEN IT BETTER  
AND FASTER WITH**



FREE time and money saving bulletins tell how stapling can cut your costs.

**BOSTITCH, 724 Mechanic St., Westerly, R. I.**

I want to fasten:

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|----------------------------------|---------------------------------------|---------------------------------|----------------------------------|
| <input type="checkbox"/> cartons | <input type="checkbox"/> plastics     | <input type="checkbox"/> wood   | <input type="checkbox"/> leather |
| <input type="checkbox"/> rubber  | <input type="checkbox"/> light metals | <input type="checkbox"/> fabric | <input type="checkbox"/> roofing |

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**MADESCO**  
**BLOCKS**



## A COMPLETE LINE

**FOR QUICK DELIVERY  
PLUS SPECIAL BLOCKS**

No matter what lifting problems you have to cope with, MADESCO Blocks will make the job easier . . . faster . . . more economical. Their reputation for dependability under the most severe service is founded on over 25 years of experience and specialization.

Block sheaves (sheaves are "the heart" of all blocks!) are available in your choice of steel or iron, with or without bushings.

Our engineering services are available to aid in your solution to any lifting problem. Our catalog will gladly be sent on request.

Write us or contact your local industrial distributor.

**MADESCO TACKLE BLOCK CO., EASTON, PA.**

# MADESCO BLOCKS

HAE-M590-2-54

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(Continued from page 204)

wealth in peacetime and build a far more powerful war machine without help from us."

R. R. Paulin, vice president and manager of operations, Michigan Consolidated Gas Company, spoke on "Natural Gas to the North." Mr. Paulin, using slide films, outlined the complex procedures and great expense involved in setting up a natural gas pipeline.

George H. Love, president of Pittsburgh Consolidation Coal Company, predicted that public utilities will buy a minimum of 50% more coal in the next ten years than they currently use. Utilities, he said, now take about 105 million tons a year.

Mr. Love told the meeting that buyers should approach coal purchasing with some "underlying principle" rather than "just a sharp pencil." He said that to help protect the coal industry against socialization, coal buyers could work toward a healthy situation in the industry by entering into long-range agreements for at least two-thirds of their requirements.

Miss Vivien Kellems, president of the Kellems Company, Stonington, Conn. was the principal speaker at the annual banquet, held Monday evening, February 15, in the Calvert Room of the Lord Baltimore. Musical entertainment was supplied by the Baltimore & Ohio Railroad Glee Club.

Dr. Joseph Zimmerman, editor of the Daily Metal Reporter, opened Tuesday's morning session with a talk on the copper situation. He was introduced by Russell C. Wenz, Duquesne Light & Power Company, Pittsburgh. Dr. Zimmerman said that the "experts" had all been fooled by the copper price situation during the past few months. Expectations of a decline in price have not materialized since Chile has not released the huge stocks she holds. He said this Chilean copper had to come on the market soon, and would have a depressing effect on prices.

Thomas D. Jolly, vice president, Aluminum Company of America, said that production of aluminum this year would approach 1.5 million tons. This is an increase of 250,000 tons over last year and nearly ten times U. S. production of primary aluminum in 1939.

"One estimate," he said, "has suggested that the future demand for primary aluminum might possibly quintuple between 1950 and 1975, both in the United States and in the rest of the world."

(Please turn to page 210)

# Introducing- The Ultimate in Needle Valves

Here is one of the crowning achievements of Marsh research, design, and manufacturing skill. It is the first needle throttling and shutoff valve to combine *all* of the qualities called for today in this highly critical and ever broadening field.

It is a valve that has strength and safety to spare . . . rated for pressures up to 10,000 psi—equally efficient in the lower ranges. A product of Marsh instrument-making and valve manufacturing experience, it combines instrument-like precision with the ruggedness that distinguishes all Marsh valve specialties.

The illustrations tell the story of new thinking; new standards. Body and stem-guide are machined from extra-heavy carbon steel bar stock. Still greater strength and rigidity are achieved by fusing the stem-guide into the body. The complete fusion of guide and body is accomplished by the exclusive Marsh "Conoweld" process.

There are two big advantages to this one-piece construction: (1) It eliminates the danger of unscrewing the valve from the body when opening—a frequent cause of leakage, even dangerous blow-outs (2) It permits perfect line-up of threads and seat. As a result, Marsh valves are easier to operate even at high pressures.

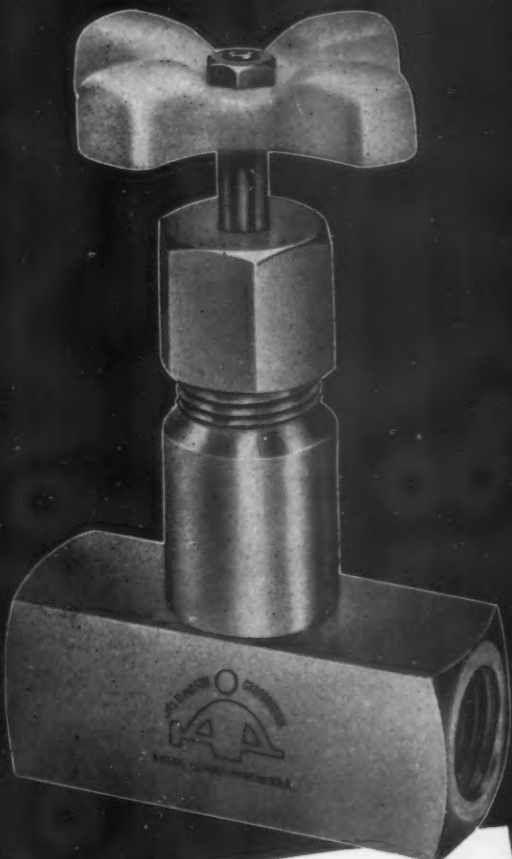
The precision-machined stem is 416 stainless steel. Stem threads are fine pitch for extra strength and fine, controlled regulation. Notable advancements are special "Marpak" one-piece, non-binding longer-lasting packing; deep thread chambers, keeping inlet and outlet piping away from ports and contributing excellent flow characteristics. Entire packing nut and packing gland are electro-zinc plated, preventing corrosion and giving the valve a handsome, plated exterior. The rugged malleable handle is finished in heavy baked enamel.

The new needle valve line includes globe and angle patterns with double female connections in sizes  $\frac{1}{8}$ ",  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1". Also globe and angle valves with male inlet and female outlet in sizes  $\frac{1}{4}$ " and  $\frac{1}{2}$ ". Complete stock carried at our Skokie, Illinois factory and also at our branch plant in Houston, Texas.

Write today for catalog giving complete details.

**MARSH INSTRUMENT CO.** Sales affiliate of Jos. P. Marsh Corporation  
Dept. G Skokie, Ill.  
Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas

# MARSH

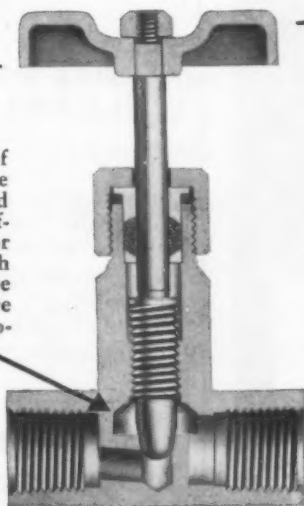


**MAXIMUM WORKING PRESSURE  
10,000 PSI**  
for water, oil or gas

- Body and stem guide extra heavy bar stock fused into one piece.
- Valve stem 416 stainless steel.
- Packing special one-piece "Marpak" moulded ring.
- Bodies marked in accordance with MSS regulations.

## ONE PIECE

The stem guides of conventional needle valves are screwed into bodies—this often causes leakage or blow-outs. Marsh Needle Valves are fused into one-piece by exclusive "Conoweld" process.



# JOHNSON UNIVERSAL BRONZE

AS NEAR AS  
YOUR  
PHONE



From this huge stock of Johnson Bronze Bars you can select your needs by bearing size. They are completely machined—inside diameter, outside diameter, and ends—with only a  $\frac{1}{64}$ " cut to bring to bearing size. You will find many uses for them . . . bearings, bushings, washers, thrust plates, etc. And they are available from stock at your authorized Johnson Distributor and in 23 warehouses from coast to coast.

Johnson Universal Bronze is cast from highest quality bearing bronze, an alloy that cuts easily, yet is thoroughly serviceable. Cored bars are made with inside diameters from  $\frac{1}{2}$ " to  $7\frac{3}{4}$ ", outside diameters from 1" to 10". Solid bars from  $\frac{5}{8}$ " to 8" diameters. Call your Johnson Bearing distributor.

JOHNSON BRONZE CO.  
450 S. Mill St., New Castle, Pa.

OVER  
350  
SIZES

JOHNSON **B** BEARINGS  
*Sleeve-Type*

For More Information Circle No. 240 on Inquiry Card—Page 17

(Continued from page 208)

Mr. Jolly said that he expects American industry to use atomic energy as a supplementary means of furnishing power—possibly within ten years. He declared, "the time is not too far distant when electricity obtained from facilities based upon atomic energy will take its place as an important supplement to the coal, gas, oil and hydro-based generating facilities upon which we now rely for the power that makes our industry run."

William Rooney, markets editor of Steel Magazine, discussed the outlook for steel.

Closing session of the conference featured a panel discussion on prices, escalation and progressive payments. Participants were R. H. Sperreng, purchasing agent, Union Electric Co. of Missouri; George H. Cole, purchasing agent, Alabama Power Company; J. Donald Hogg, purchasing agent, Cleveland Electric Illuminating Company; and the following manufacturers' representatives:

R. M. Casper, manager, power department, Allis-Chalmers Manufacturing Co.; H. G. Ebdon, vice-president, Combustion Engineering, Inc.; and J. J. Huether, manager, sales department, Apparatus Sales Division, General Electric Company.

1 1 1

## 'Ultrasonic Inspection' Film

"Ultrasonic Inspection", a ten-minute sound-color film describing the development, theory, operation and application of the Sperry Ultrasonic Reflectoscope for non-destructive testing of metal and other materials, has just been released by Sperry Products, Inc., Danbury, Conn. Prints of the film are available for showing to interested groups.

1 1 1

## Lighting Developments told to R. I. Ass'n at Feb. Meeting

Marshall R. Newcomb of Sylvania Electric Products, Inc., was the featured speaker at the February meeting of the Rhode Island Purchasing Agents Association. He spoke on "Recent Developments in the Field of Lighting". A display of modern lighting equipment was available for inspection.

USE CONVENIENT INQUIRY  
READER SERVICE POST CARD  
ON PAGE 17

For More Information Circle No. 241  
on Inquiry Card—Page 17→  
PURCHASING



Photo by Offie Lites—Pine Bluff

Diesel engine shed, St. Louis Southwestern R.R. Co., Pine Bluff, Ark. Roof and sides of "Century" Asbestos Corrugated. Erection Contractor: Mound City Erection Co., St. Louis, Mo.

**Cotton Belt Railway gets  
long-lived, low-cost shed of**

**"Century"**  
**ASBESTOS CORRUGATED**

This new diesel engine shed will serve the Cotton Belt Railway for many, many years—through all kinds of weather with little or no maintenance ever required. Such service is to be expected of "Century" asbestos corrugated!

This lifetime roofing and siding is made from asbestos fiber and portland cement, and so combines the advantages of both materials. It is strong, dense, and tough; will not burn, rot, or corrode; is maintenance-free, and

never needs protective paint. It is easy to handle, cut, and erect, too.

Best of all, "Century" asbestos corrugated is one of the most economical materials you can use—low in application cost, low in maintenance expense!

If you are now planning construction for your company, find out more about the many advantages you get with "Century" asbestos corrugated. Write for complete information.

**KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA**

*Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873*



For More Information Circle No. 243 on Inquiry Card—Page 17

APRIL, 1954

213

# 42 STOCK SIZES

**HALLOWELL**  
**SOLID STEEL**  
**COLLARS**



now size-marked for easy identification



Your HALLOWELL distributor now stocks these size-marked precision machined solid steel collars in sizes to fit shafts from  $\frac{3}{16}$ " to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 31, Pa.

HALLOWELL POWER TRANSMISSION DIVISION

**SPS**  
JENKINTOWN PENNSYLVANIA

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## PLYMOUTH

### Rubber Bands

OUTSTRETCH  
OUTLAST  
ALL OTHERS



**PROMPT  
DELIVERY**

- Bands for Every Purpose
- Saves Time and Labor in Production
- We'll Make Them for Your Special Needs

NATIONALLY DISTRIBUTED . . . AVAILABLE AT YOUR REGULAR SUPPLIERS

*All Plymouth Standard Bands Made to Federal Specifications*

**PLYMOUTH RUBBER COMPANY, Inc., Canton, Mass.**

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## Wisconsin Buyers Meet

The City of Milwaukee's "Welcome" sign went up, in large illuminated letters on the City Hall tower, for the quarterly meeting of the Wisconsin Chapter, National Institute of Governmental Purchasing, held in that city on March 5th.

The meeting program consisted principally of round table discussion of current topics, with lively participation on the part of the members. Among the subjects covered were: Acknowledgment of orders; salesmen's passes for interviewing department heads; methods of handling emergency and petty cash purchases; battery additives; expediting and follow-up systems; and evidences of collusion in recent bids on chlorine.

Special features included an inspection visit to the General Mitchell Airport, now in process of



modernization, and a tour of the new building of the Milwaukee County House of Correction. Joseph Drewniak, in charge of the institution, and John Messmer, county architect and superintendent of construction, discussed purchasing for institutions and the possibility of consolidated purchases for city and county requirements.

The Chapter's June meeting will be held at Oshkosh on the 11th.

1 1 1

## Buffalo Holds Forum On 'Obtain the Best Price'

The February meeting of the Purchasing Agents Association of Buffalo was highlighted by a panel discussion on the principles and practices of "Obtaining the Best Price". Panel Moderator was Frank Whyte. Bob Forbes, Ed Obenchain, Charlie Parezo and Chet Bell made up the panel. Later, three new members were welcomed into the association.

production tool...

# BEHR-MANNING<sup>®</sup> Coated Abrasives

By leaps and bounds, this high potential productive tool of the metalworking industry has become a major factor in industry today. Methods that yesterday were experimental, have quickly demonstrated their value, and now standard machinery is manufactured to make widespread application possible.

The latest mechanized methods of applying coated abrasives in a more productive way, are represented in BEHR-MANNING

Demonstration Rooms, strategically located over the country. Visit the one near you—see the latest time-saving equipment—try it out on your work—and find new ways to cut costs. No obligation—just 'phone your local BEHR-MANNING Representative or write Behr-Manning Corp., Troy, N. Y., Dept. PU-4.

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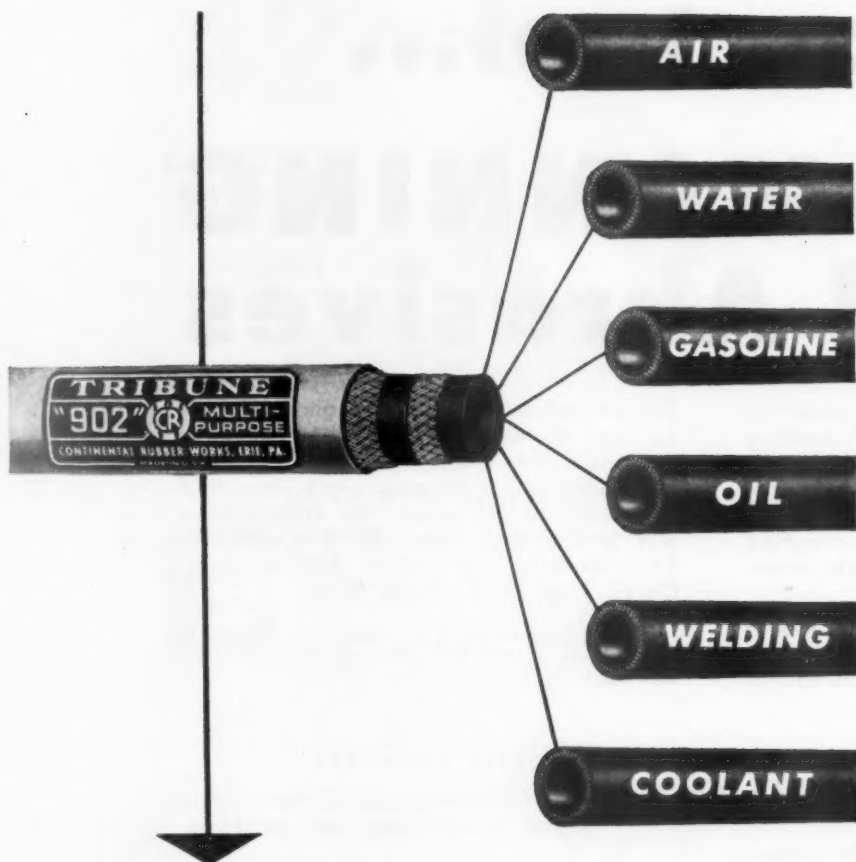
**BEHR-MANNING**  
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*division of NORTON Company*

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## This ONE Hose Does All SIX Jobs

### How to simplify your hose buying

Why *buy* and *stock* 6 different hoses when *one* will do the trick? Continental's "902" is a versatile, all-purpose hose. It gives outstanding service for air, water, gasoline, oil, welding or coolants. Truly, a "jack of all" hose-jobs . . . yet master of *all*.

Continental "902" Multi-Purpose Hose is all neoprene. It's light weight, flexible, non-kinking, easy-to-handle. In a range of sizes, this *one* hose will handle 90% of your needs.

Delivery? Right now from stocks carried at all times in our 15 warehouses at left. Sizes  $\frac{3}{16}$ " through  $1\frac{1}{2}$ ".

Call or write the nearest Continental Warehouse and ask for Multi-Purpose Hose. You'll like the hose—and the service—you get.

Send now for  
CONTINENTAL'S Special  
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For More Information Circle No. 248 on Inquiry Card—Page 17

### Andrews Guest Speaker at 20th Annual Eastern New York Executives' Night



Frank Whyte, Buffalo, newly elected Vice President for District 8.

Purchasing agents and top executives of nearly 100 leading firms in 20 cities attended the annual Executives' Night meeting of the Purchasing Agents Association of Eastern New York on February 17.

The affair, the twentieth in a series, was held at the DeWitt Clinton Hotel in Albany.



A. Kemp Stevens, Syracuse, and Frank Plumley, Eastern New York.



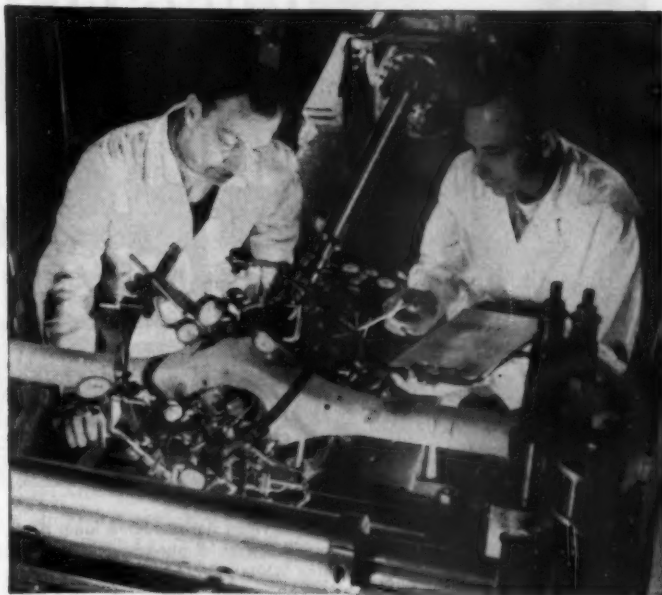
Vice President Howard Ahl and Eastern New York President Ken Gordinier.

(Please turn to page 220)

## There's safety in numbers like this



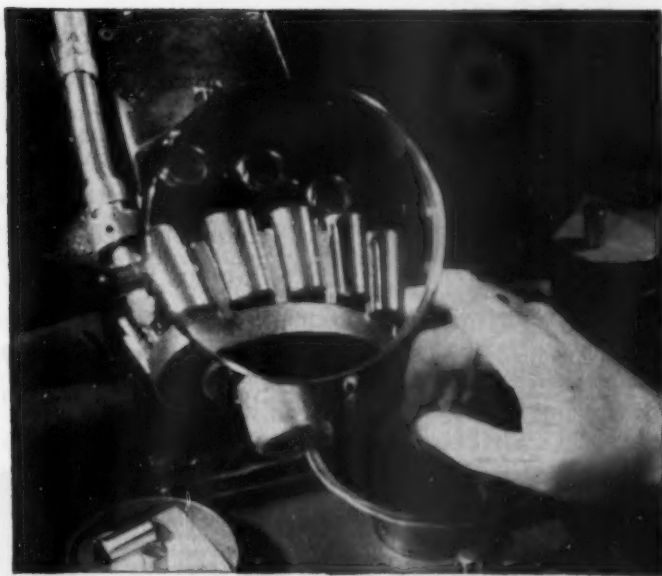
THE NUMBER HM89410 on the cup—and HM89446 on the cone of this bearing tell you it's a certain type and size of tapered roller bearing. But a top P. A. knows it's his safest buy when he sees the trade-mark "Timken®" beside the number. That means *extra* quality and service from the bearing and its maker.



SERVICE LIKE THIS is part of the value you get when you specify Timken bearings. Through our extensive bearing application testing service, we catch trouble before it happens—in the design stage. Customers then get written reports with recommendations. For instance, stiffening housings or shafts or changing to other sized bearings.





WE MAKE CHECKS IN 3D with this universal measuring machine. It measures the length, width and depth of machine and gage parts. Accurate to fifty-millionths, it's another example of how far we go to put precision into our bearings—to help make them the number 1 value for *your* product and a big selling point for it, too.



WE PUT EVERY ROLLER under a magnifying glass to search for surface flaws—another inspection that helps assure the *same* high quality in *every* Timken bearing. Quality, service and public acceptance make Timken bearings your number 1 value. Specify "Timken" with the bearing number. The Timken Roller Bearing Company, Canton 6, Ohio.

**Quality, service and public acceptance make TIMKEN number 1 for VALUE**

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

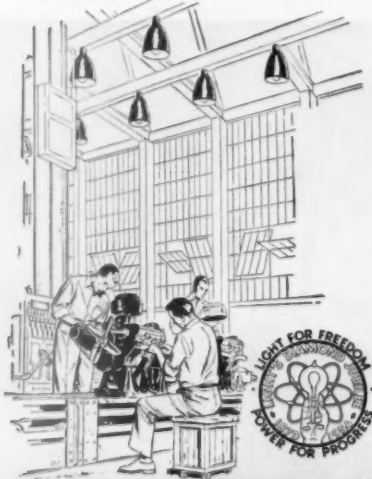


# Improve your factory lighting ...and save money!

**SYLVANIA'S  
IMPROVED MERCURY VAPOR LAMPS  
GIVE MORE LIGHT AT LOWER COST!**

**J-H1** . . . This color-corrected lamp is coated on the inside with a special phosphor which provides a "Golden White" light . . . a more pleasing color than the bluish-green of natural mercury vapor lamps.

These lamps give twice the light output for the same amount of wattage. And, they provide several times the life of incandescent lamps. As a result, Sylvania Mercury Vapor Lamps help to lower maintenance costs, improve seeing conditions . . . and speed production, too.



## A COMPLETE LINE

Sylvania Mercury Vapor Lamps are available in types and sizes for every industrial requirement. Of special interest are the improved color-corrected lamps with the "Golden White" light. New illustrated folder gives complete information.

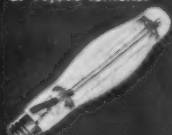
Write to Dept. 4L-4504,  
Sylvania for your copy today!

**E-H1** . . . Ideal for "high bay" industrial lighting. Rated at 400 watts, delivers 20,000 lumens.



**C-H5** . . . a smaller size of the E-H1 type, for general industrial applications. 250 watts, 11,000 lumens.

**A-H1** . . . Popular, low-cost mercury lamp. Rated at 400 watts with an output of 15,000 lumens.



**K-H1** . . . A mercury lamp with built-in reflector for industrial lighting applications. 400 watts, 16,000 lumens. Also offered with special color-correction phosphor.

# SYLVANIA

Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

In Canada: Sylvania Electric (Canada) Ltd., University Tower Bldg., St. Catherine Street, Montreal, P. Q.

**LIGHTING • RADIO • ELECTRONICS • TELEVISION**

For More Information Circle No. 250 on Inquiry Card—Page 17

(Continued from page 218)  
E. F. Andrews, president of the National Association of Purchasing Agents was the principal speaker.



National President E. F. Andrews, and "Pete" Wight, Rochester.

Howard Ahl, District 8 vice president of N.A.P.A., also spoke. K. B. Gordinier, president of the association, presided. Past presidents of the association were guests at the meeting.

## Movie on Alcoa Skyscraper

America's first aluminum skyscraper, the spectacular Alcoa building in Pittsburgh, is the subject of a 28 minute movie recently completed by the Aluminum Company of America, Pittsburgh. Called "Aluminum on the Skyline", it depicts the design and construction of Alcoa's headquarters office building. Prints may be obtained by writing Alcoa's Motion Picture Department, 722 Alcoa Bldg., Pittsburgh 19.

## New Welding Film

A motion picture, "New Welding Procedure", has been produced by Eutectic Welding Alloys Corp., Flushing, N. Y., and is now available for distribution. The full-color, sound, picture is a step by step explanation of welding rod and electrode techniques and procedures.

## U. S. Plywood Corp. Movie

Home improvement with plywood is the subject of "Seeing Is Believing", a 22-minute color movie of United States Plywood Corp., New York 36, N. Y.

**USE CONVENIENT  
INQUIRY POST CARD  
PAGE 17**

# of DU PONT NYLON longer...never need oiling

## Toughness and abrasion resistance of Du Pont nylon—a unique engineering material —make possible new door-hinge design

Hinge bearings for heavy-duty doors—such as those installed at a busy department-store entrance—receive rough treatment. They are in constant use throughout the day. They are exposed to dirt, moisture, heat and cold. If designed of conventional bearing materials, they require frequent lubrication and adjustment . . . must often be replaced at frequent intervals.

This problem was solved at John Wanamaker's Philadelphia store by means of hinges equipped with bearings molded of Du Pont nylon. The toughness and abrasion resistance of this unique engineering material enable these bearings to withstand the severe impact and tensile stress of heavy-duty door operation without binding, stiffness or squeaking. The nylon bearings have already provided over three times the normal service of the bearings previously used and still show no perceptible signs of wear. And, thanks to the low coefficient of friction of Du Pont nylon, these bearings *have never been oiled*.

**Have you and your company investigated the properties** of Du Pont nylon and the other members of the Du Pont family of plastic engineering materials—"Alathon" polyethylene resin, "Lucite" acrylic resin and "Teflon" tetrafluoroethylene resin? The application described above and others shown on these pages are typical of the product improvements made possible when design and service requirements are evaluated in terms of the properties of these unique engineering materials.

For further information on the properties and uses of these materials, use the coupon below or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 304, Du Pont Bldg., Wilmington 98, Delaware.

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department  
Room 374 Du Pont Bldg., Wilmington 98, Delaware.

Please send me more information on the Du Pont plastic engineering materials checked: ☐ Du Pont nylon; ☐ "Alathon" polyethylene resin; ☐ "Teflon" tetrafluoroethylene resin; ☐ "Lucite" acrylic resin. I am interested in evaluating these materials for \_\_\_\_\_

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Title \_\_\_\_\_  
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Street Address \_\_\_\_\_  
City \_\_\_\_\_  
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Type of Business \_\_\_\_\_



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BETTER THINGS FOR BETTER LIVING  
... THROUGH CHEMISTRY

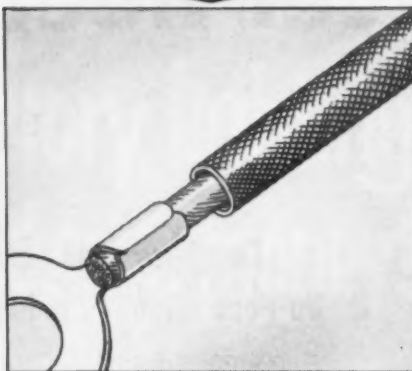
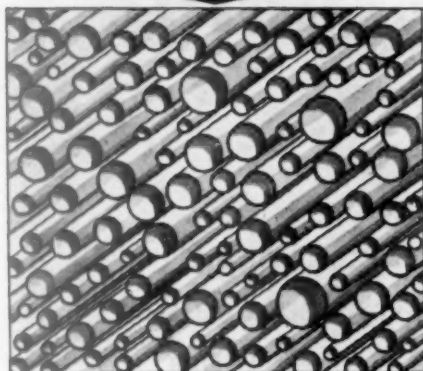
\*Trademark of E. I. du Pont de Nemours & Co. (Inc.)

For More Information Circle No. 252 on Inquiry Card—Page 17

APRIL, 1954

223

# Why All This? for Just This?



Insulating a lead or wire is just a matter of slipping on a piece of tubing or sleeving. Then why are there thousands of standard and special Dieflex treated tubing and sleeving products?

One reason is that the leads on some electrical or electronic units have to be protected with tubings or sleeveings against temperatures that may go up to 392F. Other equipment may need tubings that have exceptional flexibility and push-back ability for easy handling, high abrasion resistance, resilience, or chemical resistance to withstand physical and chemical abuse. That is why there are five different types of Dieflex tubings and sleeveings, each excelling in one or more important features. Made with a flexible braided glass or cotton sleeving base, the different types are silicone rubber and varnish treated glass, "Vinylglas" vinyl coated glass, and oleoresinous varnished glass and cotton.

Insulation on wires must withstand different voltages, also. That means different grades of tubings and sleeveings, each with a different dielectric strength. Every type of Dieflex product is made in four or five NEMA grades.

What's more, if leads are to be identified by color, each type and grade of tubing or sleeving must be available in different standard or special colors or tracer combinations—ten or more in the case of some Dieflex products.

Then, to assure snug fits, figure on 25 or 30 different standard sizes for each type, grade, and color of Dieflex tubing or sleeving.

These are the reasons there are thousands of different Dieflex tubings or sleeveings. These are the reasons why you're sure to get the tubing or sleeving that exactly meets the requirements of your job—IMC can give unbiased recommendations.

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INSULATION		MANUFACTURERS CORPORATION		ELECTRICAL INSULATION	
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<b>*CHICAGO 6</b> Complete-Rending Elec. Co. Inc. 100 S. Jefferson St. Phone Central 6-5390	<b>DETROIT 2</b> Harry E. Brothers 15 Lowman Ave. Phone Townsend 8-2577	<b>*MINNEAPOLIS 3</b> H. A. Holden, Inc. 1208 Harmon Place Phone Geneva 5353	<b>PEORIA</b> W. C. Johnson 101 Holzer Court Phone 2-7706		
*LOCAL STOCKS AVAILABLE AT THESE LOCATIONS					

For More Information Circle No. 253 on Inquiry Card—Page 17

## Pittsburgh PA's Visit Plant; Hear S. F. Heinritz Address

The February meeting of the Purchasing Agents Association of Pittsburgh was a threefold affair. The members first visited the Pittsburgh Steel Co., New Sheet Steel and Tube Plant in Allentown. Following this was a luncheon at the Pittsburgh Athletic Association. At the evening meeting, the members listened to address by Stuart F. Heinritz, editor of PURCHASING, on the subject, "What the Purchasing Agent Can Learn from the Salesman."

1 1 1

## Professor Addresses Michigan Ass'n on 'Americanism'

Professor Paul D. Bagwell, head of the Department of Communications Skil's, Michigan State College, and past president of the National Junior Chamber of Commerce, was the guest speaker at a recent meeting of the Purchasing Agents Association of Central Michigan. Professor Bagwell spoke on "Americanism".

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## Cleveland Plays Host to Sales Executives' Club

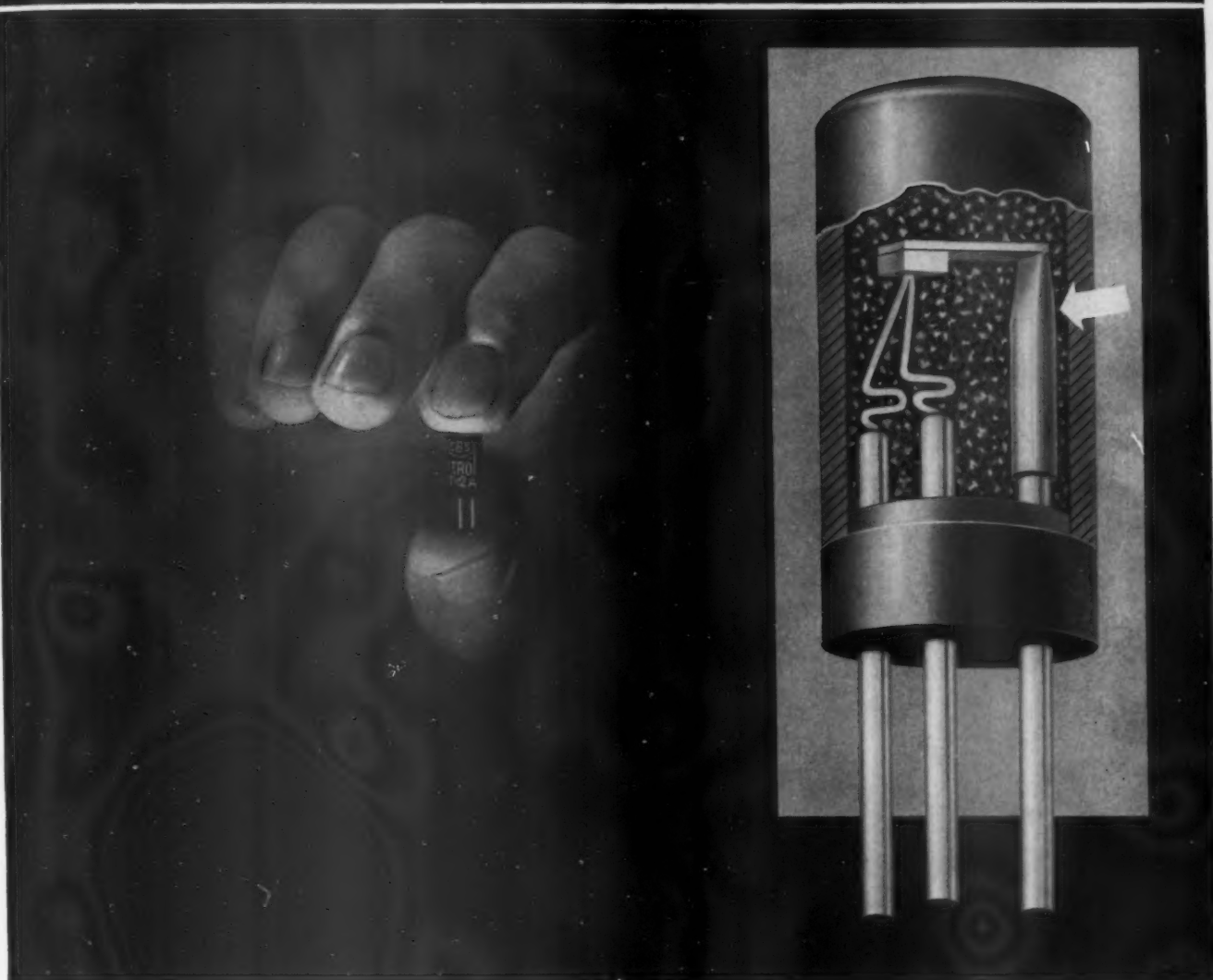
The Purchasing Agents Association of Cleveland played host to the Sales Executives' Club at the association's meeting in February. Speaker for the meeting was William S. Sadler, Jr. of Sadler & Associates, personnel - management counsel. His subject was "Success and Happiness". A forum discussion was held earlier on "Small Order Problems". On the panel were Frank J. DeCrane, Lamson & Sessions Co. and George Fay, Addressograph-Multigraph Corp. W. Dale Kimmel, Standard Products Co. was the chairman.

1 1 1

## Columbus Holds Panel Meeting

A panel discussion on "Management Looks at Purchasing" was the feature of a recent dinner meeting of the Columbus Association of Purchasing Agents. The panel included Gordon Rieley, Lennox Furnace Co.; John I. Trimble, Surface Combustion Corp.; Bruce C. Behmer, Jaeger Machine Co.; Howard R. Rusk, Columbus Bolt & Forging Co. and L. W. Payne, Kilgore, Inc., all representing management, and a group of local purchasing agents. Fred Bell, Commercial Motor Freight, Inc., was the moderator.

## Transistors use Tubing...can you?



Something has happened in electronics of importance to you in more ways than one.

It's a tiny device called the Transistor—successor, enthusiasts say, to some vacuum tubes.

The one above, made by CBS-Hytron, a division of Columbia Broadcasting System, Inc., is no larger than your little finger nail.

You'll soon be listening to or looking at transistorized radio and TV—or saving space, weight and power with transistors in other equipment, such as telephones, calculators or computers. Then the

materials in a transistor will be of top importance to you.

Each CBS-Hytron transistor contains a gnat-sized bracket made possible by using the good welding, soldering and formability properties of seamless nickel tubing.

Whether you need one foot of tubing for a trial balloon or one million feet for production, let Superior people and Superior's 55 analyses help you. Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.

Round and Shaped Tubing Available in Carbon, Alloy, and Stainless Steels; Nickel and Nickel Alloys; Beryllium Copper; Titanium; Zirconium.

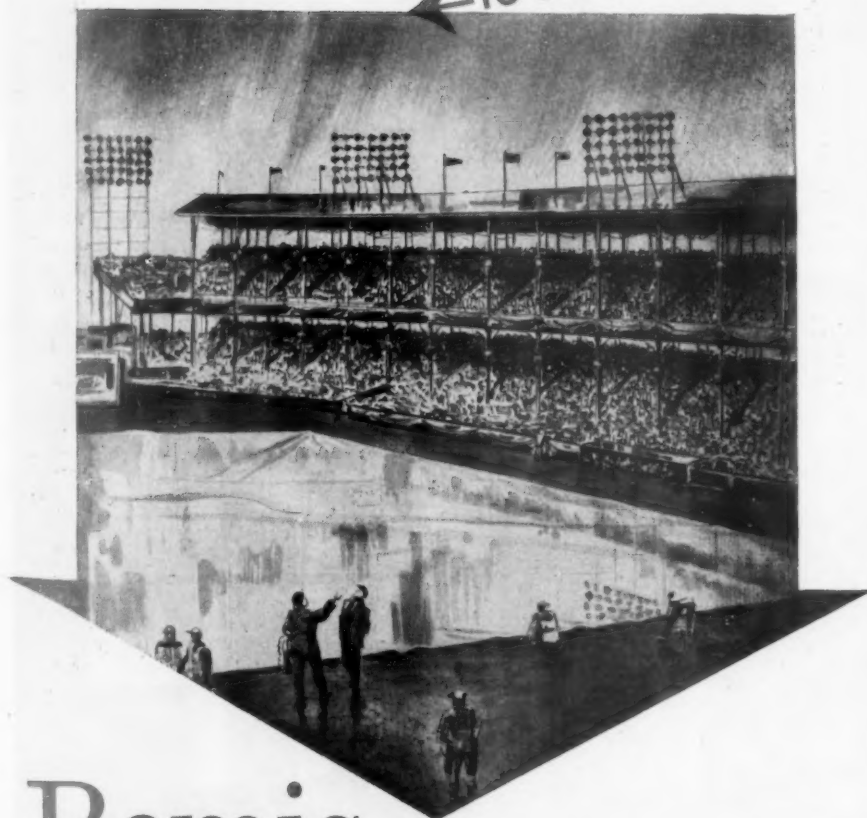
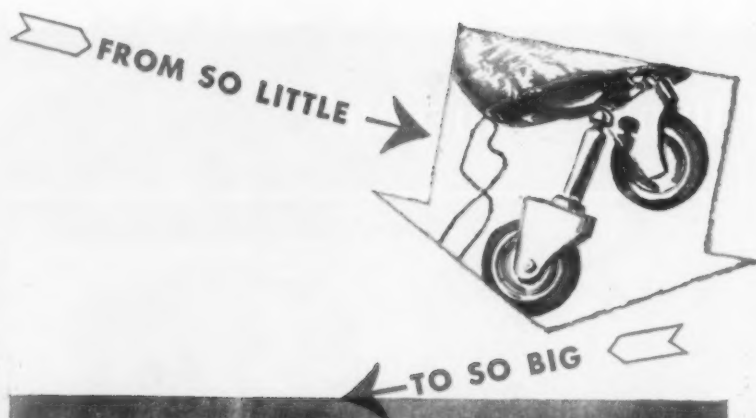


**Superior**  
THE BIG NAME IN SMALL TUBING

West Coast: Pacific Tube Company, 5710 Smithway St.,  
Los Angeles 22, Calif. RAymond 3-1331

All analyses .010" to 3/8" O.D.  
Certain analyses in Light Walls up to 2 1/2"

For More Information Circle No. 254 on Inquiry Card—Page 17



## Bemis is your top source of textile bags and specialties

Tiny cotton bags . . . for small parts, desiccants, etc. . . .  
we've made millions of 'em.

Giant infield covers . . . we provided a long-lasting nylon  
infield cover for the St. Louis Cardinals, the lightest-weight,  
easiest-handled of its size ever made.

If you need any bags or specialties of those sizes, or any-  
where in between . . . of cotton, burlap, rayon, nylon . . .  
chances are Bemis is your best bet.

What's your problem? Write us today.

# Bemis



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For More Information Circle No. 255 on Inquiry Card—Page 17

### Dow Chemical Co. Speaker Guest of Youngstown Ass'n

"Chemistry's New Dimension", was the subject of an address to the Youngstown District Purchasing Agents Association, recently. Delivered by Gene Perrin, public relations department, Dow Chemical Co., it dealt with the fundamental uses of chlorine and allied products as applied to various industries. Also, on the program, was a movie, "Air, Water and Industry." A pre-meeting forum discussed "Is Reciprocity An Influencing Factor On 1954 Buying?"

1 1 1

### Lumber Motion Picture

A full-color documentary film covering the story of lumber from its growth through its end uses, is available for showing. Called "The Bounty of the Forest", it can be obtained from Western Pine Association, Yeon Bldg., Portland 4, Oregon.

1 1 1

### Eddie Sawyer at Trenton Club

Eddie Sawyer, former manager of the National League's Philadelphia Phillies, was guest speaker at a recent meeting of the Purchasing Agents Club of Trenton (N. J.). Prior to the meeting, a forum discussion was held moderated by L. H. Van Dike, retired director of purchases for the John A. Roebling's Sons Corp. The subject was "Inventories".

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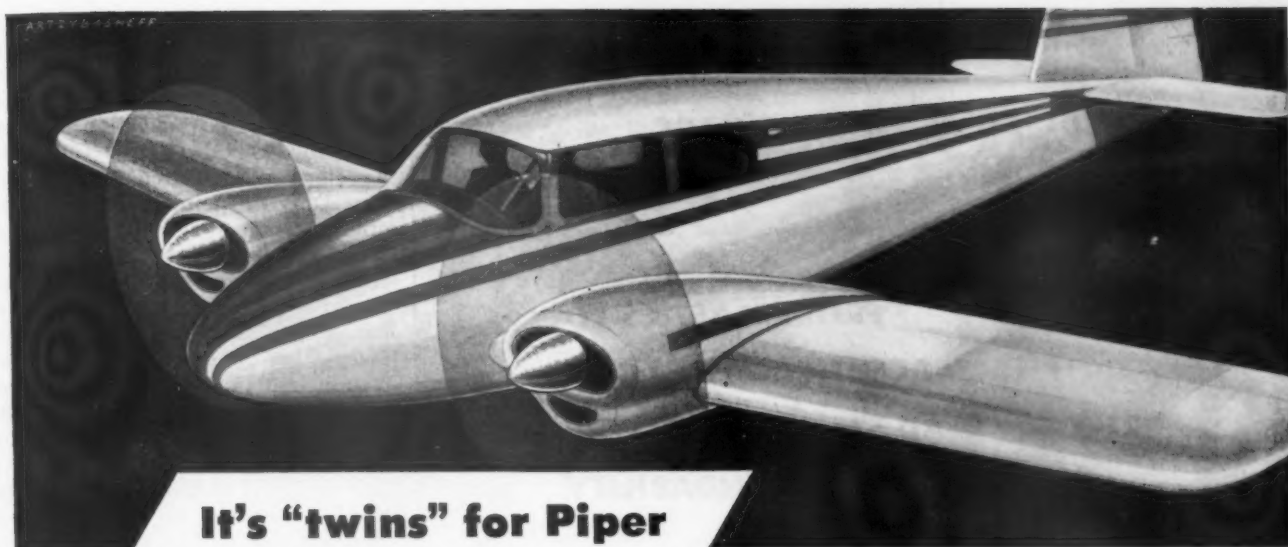
### Tri-City Sees Steps in 'Building a Better America'

"Building a Better America" was the theme of the February meeting of the Tri-City Association of Purchasing Agents. The program was conducted by Don Rouser, training director of J. I. Case Co. Mr. Rouser told what is required of individuals, industries and communities in order to provide for a better country now and in the future.

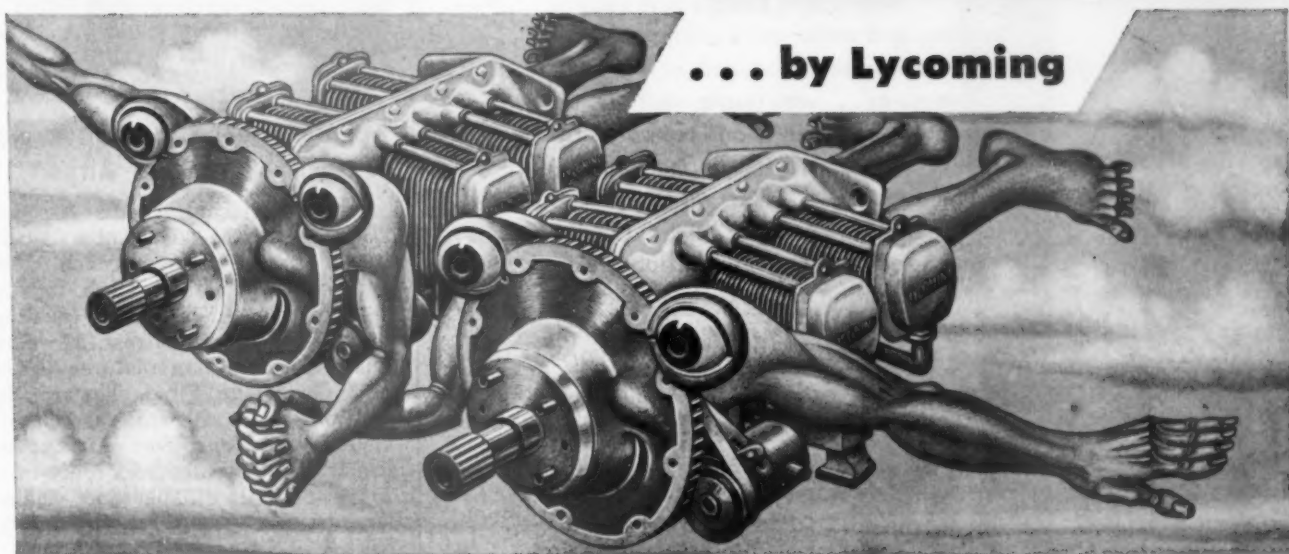
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### Canton and Eastern Ohio Ass'n See Westinghouse Film

"Energy is our business", says the Westinghouse Electric Company. And, they proved it and showed the achievements in this field down through the years at a recent meeting of the Canton and Eastern Ohio Association of Purchasing Agents. A 28-minute color movie formed the background for the program.



It's "twins" for Piper



This is the Piper Apache . . . the all-new executive plane that brings new economy to the twin-engine field while maintaining high standards of safety and dependability.

It is powered by two proven Lycoming 150-h.p. air-cooled engines designed especially for the Apache. These power plants provide an improved horsepower-weight ratio, new compactness . . . and are so powerful that the Apache can safely fly and land with a full load *on one engine alone*.

We suggest a test flight in the Piper Apache for a new experience in air travel.



Just off the press! "THE LYCOMING STORY" . . . 40 interesting, illustrated pages that give you information about the many Lycoming services listed below. Write for it on your letterhead.

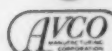
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For More Information Circle No. 256 on Inquiry Card—Page 17



**WHATEVER YOU PROCESS . . .**

**FROM PLASTICS TO  
PHARMACEUTICALS, YOU CAN  
RELY ON READ STANDARD MIXERS  
FOR TOP LEVEL DEPENDABILITY**

*Heavy Duty Double-Arm Mixers* in tilting and stationary bowl models . . . for atmospheric, reduced, or elevated pressures . . . with single, multiple, or variable-speed drives and temperature controlling jackets . . . overlapping mixing arms . . . sigma and other type mixing arms . . . working capacities one quart to 1500 gallons. • *Laboratory Mixers* for the most exacting types of laboratory mixing . . . built in working capacities of one, three, six and 20 quarts. • *Vertical Mixers*, planetary action, for processing of dry materials, creams, emulsions, and light plastic masses . . . a complete line with multiple beater speeds and designed to accommodate several sizes of bowls . . . many auxiliary attachments available . . . 12 to 175 quarts. • *Spiral Ribbon Mixers* for continuous or batch blending and mixing of pulverized, granular dry or wet materials . . . operation under pressure or full vacuum . . . with or without temperature controlling jackets . . . working capacities one to 500 cubic feet.

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For More Information Circle No. 257 on Inquiry Card—Page 17

**Denver Learns About 'Care and Feeding of Purchasing Agents'**

Dr. D. J. Duncan, dean of the University of Colorado School of Business, was the feature speaker at the February meeting of the Purchasing Agents Association of Denver. In his talk, "The Care and Feeding of the Purchasing Agent", Dr. Duncan pointed out the increased interest among schools of business in offering courses in purchasing. He also described the long struggle over the past 20 years which has resulted in industrial recognition of purchasing as a profession and member of the vital management team. It was announced that James F. Shumate, lieutenant of police, City of Denver Police Laboratory, would address the March meeting on the subject "Scientific Police Work and the Public". April's meeting was listed as a General Electric film, "A is for Atom."

1 1 1

**BC Ass'n Hears Football Coach Visits Vancouver Airport**

The Purchasing Agents Association of British Columbia heard Annis Stukus, manager-coach of the B.C. Lions Football Club, at the association's February meeting. Rounding out his address, Mr. Stukus showed motion pictures of the 1953 Grey Cup Final. Toward the end of the month, the association visited the Vancouver Airport on Sea Island. The members toured the workshops, overhaul and maintenance hangars after a buffet supper.

1 1 1

**Reynolds Metals VP Talks at Little Rock Meeting**

M. W. Henry, vice president-purchasing, Reynolds Metals Co., Louisville, Ky., was the guest speaker at a recent meeting of the Little Rock Association of Purchasing Agents. Speaking on the 1954 outlook for the aluminum industry, Mr. Henry expressed confidence in growing strength of this rapidly developing business. Later, the members elected J. K. Chambers as national director to fill the vacancy left by Kyle Cook.

1 1 1

**List of Free Films**

The Princeton Film Center, Inc., Princeton, N. J., has compiled a new list of free loan 16mm sound films of a wide range of subject matter. All requests should be sent directly to the Princeton Film Center.

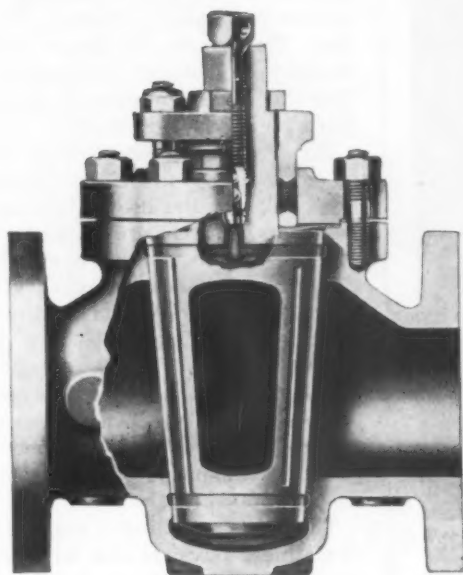
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# WALWORTH

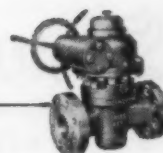
## Lubricated

## Plug Valves

for TOUGH assignments



where tight shut-off...  
and easy operation  
are "MUSTS"



### Walworth Lubricated Plug Valves Offer These Advantages

- Complete surrounding of ports with resistant lubricant affords positive seal against leakage.
- Lubricant grooving system assures ease of operation — tight shut-off — greater protection against corrosion.
- Body and plug fully protected by lubricant from attack by line fluids.
- Quarter turn opens or closes valve.
- Made in a complete range of sizes  $\frac{1}{2}$ " to 26" and for pressures from 175 to 5,000 psi., and for vacuum requirements.

For handling petroleum products, natural or manufactured gas, acids, alkalies, solvents, slimes, slurries . . . in fact for almost any hard-to-handle liquids—there's a Walworth Lubricated Plug Valve designed for the job.

Easy to operate, tight sealing, resistant to wear and corrosion, Walworth Lubricated Plug Valves assure long years of dependable service at low operating cost.

Walworth Lubricated Plug Valves are available in sizes  $\frac{1}{2}$ " to 26" for pressures from 175 to 5,000 psi., and for vacuum requirements. For full details—prices, sizes, dimensions, and other pertinent data, see your Walworth distributor or write to:

## WALWORTH

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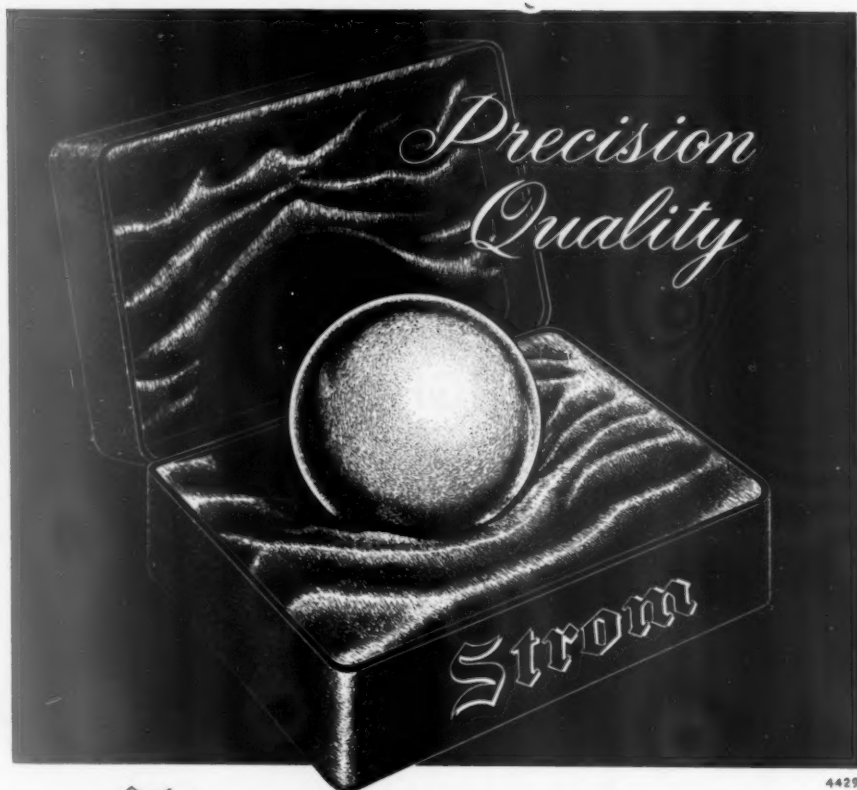
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For More Information Circle No. 258 on Inquiry Card—Page 17

APRIL, 1954

229



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*Largest Independent and Exclusive Metal Ball Manufacturer*

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For More Information Circle No. 259 on Inquiry Card—Page 17

# HANDEEZ

**THE HAND CLEANING COMPOUND  
THAT REMOVES GROUND-IN GRIME  
GENTLY AND SAFELY**

Shop grime works deeply into pores . . . its residue is a contributory factor in dermatitis. Tiny skin cuts caused by harsh abrasives are entering points for skin infections. HANDEEZ lifts hard-to-remove grime from the pores by means of a sterilized vegetable emollient. The result: clean, smooth skin, even where cutting oils and other stubborn shop grime are present.

HANDEEZ is ideal for both shop and office use.

*Write for literature, or see your  
Dolge Service Man.*

**FOR  
FREE SANITARY SURVEY  
OF YOUR PREMISES  
SEE YOUR DOLGE SERVICE MAN**

*Dependable*  
**DOLGE**

WESTPORT, CONNECTICUT

For More Information Circle No. 260 on Inquiry Card—Page 17

## Slide Chart Gives Stainless Buyers Data for Selection

Metal-working shops throughout the country have been receiving a new slide rule like chart which quickly answers the question of exactly what type of stainless steel should be used for about 95% of operations requiring the use of stainless. Thousands of these selector charts are being distributed by Crucible Steel Company of America, Box 88, Pittsburgh 30, Pa.

The stainless steel selection method covered by the chart—designed especially for the use of fabricators, designers, purchasing agents and others who do not have metallurgical training—was developed by Hugo Becker, Assistant Product Manager for Crucible's tool steel products.

The use of the chart approaches the problem in much the same way as the metallurgical engineer in selecting the proper stainless steels for an application.

The front contains a comparison of stainless physical and mechanical properties, and elevated temperature properties. The reverse side gives a large number of the important characteristics of stainless.

The chart cannot be designed to cover all cases. The rarer jobs require the special knowledge of a competent metallurgist for specific advice.

1 1 1

## Magnesium Production Fell About 12% in 1953

The Magnesium Association has released the following figures, based on information received from the U. S. Bureau of Mines:

U. S. primary magnesium production in 1953 amounted to 93,075 short tons and was about 12% less than the corresponding figure for 1952 of 105,821 short tons. Dow's Freeport, Texas, plant accounted for 32% and the balance was produced in six government-owned plants. Of the latter, five ceased operations as of June 30, 1953 in conformance with a Munitions Board directive. The remaining plant at Velasco, Texas, is scheduled to continue operations.

1953 magnesium consumption of approximately 38,000 tons was about 15% below the preceding year.

Primary magnesium ingot base price increased from 24.5 cents per lb. to 27 cents per lb. on March 9,

For More Information Circle No. 261  
on Inquiry Card—Page 17 →

PURCHASING

# Announcing

## THE WORLD'S MOST COMPLETE LINE



# NEW Starrett

HIGH PRECISION — LOW FRICTION

## DIAL INDICATORS

(Patents Pending)

NOW, from the pioneers in precision measuring, comes a new line of dial indicators combining improved design with all the dependable features of previous models, long known and accepted throughout industry for their accuracy and precision workmanship. Precision built throughout to American Gage Design specifications the complete new Starrett line offers 140 models to meet every requirement. New design, with outstanding new features to insure greater accuracy, sensitivity and repeatability; easier, faster reading; longer life and simplified maintenance — these are the finest indicators ever to carry the Starrett name.

## 140 MODELS

to meet every quality control requirement

- **STANDARD A.G.D. SERIES** — Four series — No. 81 (A.G.D. Group 1), No. 25 (A.G.D. Group 2), No. 655 (A.G.D. Group 3), No. 656 (A.G.D. Group 4).
- **REGULAR OR NONSHOCK** — New NONSHOCK mechanism available on all indicators (except .020", .400" and 1.000" ranges) — completely absorbs impact and shock. Also balanced or continuous dials, jeweled or plain bearings, English or Metric graduations.
- **LONG RANGE MODELS** — All long range indicators are *direct reading* . . . count hands read directly in decimals — no calculations.

### Visit The STARRETT Exhibit BOOTH 211, ASTE SHOW

See these *new* Starrett Dial Indicators *plus* many new Starrett Precision Measuring Tools.



### SEND THE COUPON TODAY

for information on Starrett *High Precision — Low Friction* Dial Indicators.

THE L. S. STARRETT COMPANY, Dept. P  
Athol, Massachusetts

Please send information on Starrett *High Precision — Low Friction* Dial Indicators.

Name.....Title.....

Company.....

Street and Number.....


City.....Zone....State.....

# Starrett®

"WORLD'S GREATEST TOOLMAKERS"



MECHANICS' HAND MEASURING  
TOOLS AND PRECISION INSTRUMENTS • DIAL INDICATORS • STEEL TAPES  
PRECISION GROUND FLAT STOCK • HACKSAWS, BAND SAWS and BAND KNIVES  
THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.



*Minimize*  
WARPAGE or  
DISTORTION

*Speed*  
MACHINING

*Increase*  
PRODUCTION

*BUILT-IN to your production stock  
when it's*

# WYCKOFF

## COLD FINISHED STEEL

CARBON... ALLOY... LEADED

**You can always be sure with**

- Wyckoff Controlled Quality Carbon, Alloy and Leaded Steels
- Turned and Polished, Ground and Polished Shafting
- Strain and Stress Relieved, Annealed, Heat-Treated, Quenched and Tempered Steels
- Wide Flats up to 12" x 2"



**FULL COLOR  
SPARK TESTING FILM  
AVAILABLE**

This fast, inexpensive, non-destructive testing method identifies metals by analyzing the elements present. The film presents some of the fundamentals.

Address requests for showings to our general offices.



## WYCKOFF STEEL COMPANY

General Offices: Gateway Center • Pittsburgh 30, Pa.

Branch Offices in Principal Cities

Works: Ambridge, Pa. • Chicago, Ill. • Newark, N. J. • Putnam, Conn.

### February Deliveries of New Freight Cars Show Drop

Deliveries of new domestic freight cars in February 1954 totaled 3,974 compared with 4,944 in January and 7,780 in February 1953, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 2,057 freight cars were placed by the railroads in February. The backlog of cars on order as of March 1, 1954 was 25,441, compared with 27,959 on February 1.

1 1 1

### Allis-Chalmers Shows New Line of A-C Induction Motors

The Allis-Chalmers Manufacturing Company's complete new line of alternating current squirrel cage induction motors in frame sizes 326 and smaller was introduced recently at the company's Norwood, Ohio, plant.

The new design of frame sizes up to and including 326 follows the newly established NEMA standards, which mark the first major change in frame reassignment for these sizes in 25 years. The introduction of the new Allis-Chalmers motor design coincided with the 50th anniversary of the Norwood Works as a part of Allis-Chalmers Manufacturing Company.

Application engineer E. F. Greiwe, in a comparison of construction and performance standards between the old and new designs, pointed out that the new motors (designated Type G) will retain all the important features of Allis-Chalmers "AP" line while offering certain improvements inherent in the redesign. "For example," he said, "a 5-hp, 1800-rpm purpose NEMA design B drip-proof, squirrel cage motor built on the present 254 frame, meets the following standards:

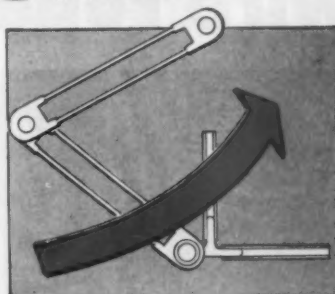
Temperature Rise	40C
Locked Rotor Torque	185% minimum
Breakdown Torque	225% minimum
Locked Rotor Current at 220 volts	90 amps. maximum
Slip	5% maximum
Service Factor	1.15

Under the new standards, the 5-hp, 1800-rpm motor will be on the 215 frame. None of the performance standards will be altered, and performance in the rerated frames will be within the limits of present values."

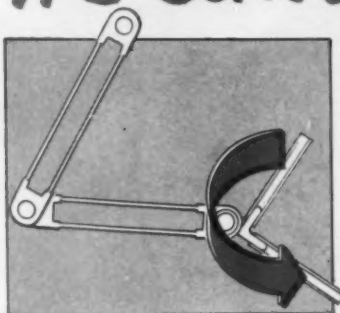
make life  
draftsmen?

## Because it's FAST

The Paragon Drafting Machine operates on the basic parallelogram principle. Three drums of precisely equal diameter are fitted with non-slipping bands. Top drum is fixed so that it cannot turn. Wherever you move the Paragon over the entire working area, you can draw precisely parallel lines: horizontal, vertical, or at any angle.



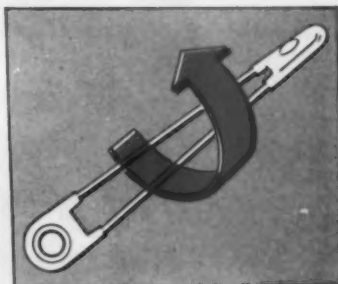
## It's CONVENIENT



The Paragon is controlled entirely with your left hand, leaving your right hand free to draw. A slight pressure on the control ring gives you any common angle and its complement. All lines are drawn to exact length as you go, with no "tails" to erase later. When you're not using your Paragon, you simply park it out of the way on the anchor step.

## It stays ACCURATE

Open-center arm construction, with no rigid center member, makes it practically impossible to disturb band length and factory-set tension. Even when the arms are twisted somewhat, as they must be when the head is lifted off the board, the dimensions of the rigid tubes and assembly remain unchanged. Scales continue to make exactly parallel lines straight out to the end.



## It CUTS COSTS too

The Paragon eliminates hundreds of waste motions that the draftsman would have to make with hand equipment. It stays true and easy to operate throughout its entire life. It pays for itself in a matter of weeks, continues to cut costs over the years!

*That's Why We Say . . .*

IT'S QUICKER, EASIER, NEATER,  
WITH A PARAGON!

**KEUFFEL & ESSER CO.**

Est. 1867

NEW YORK, N. Y.

HOBOKEN, N. J.

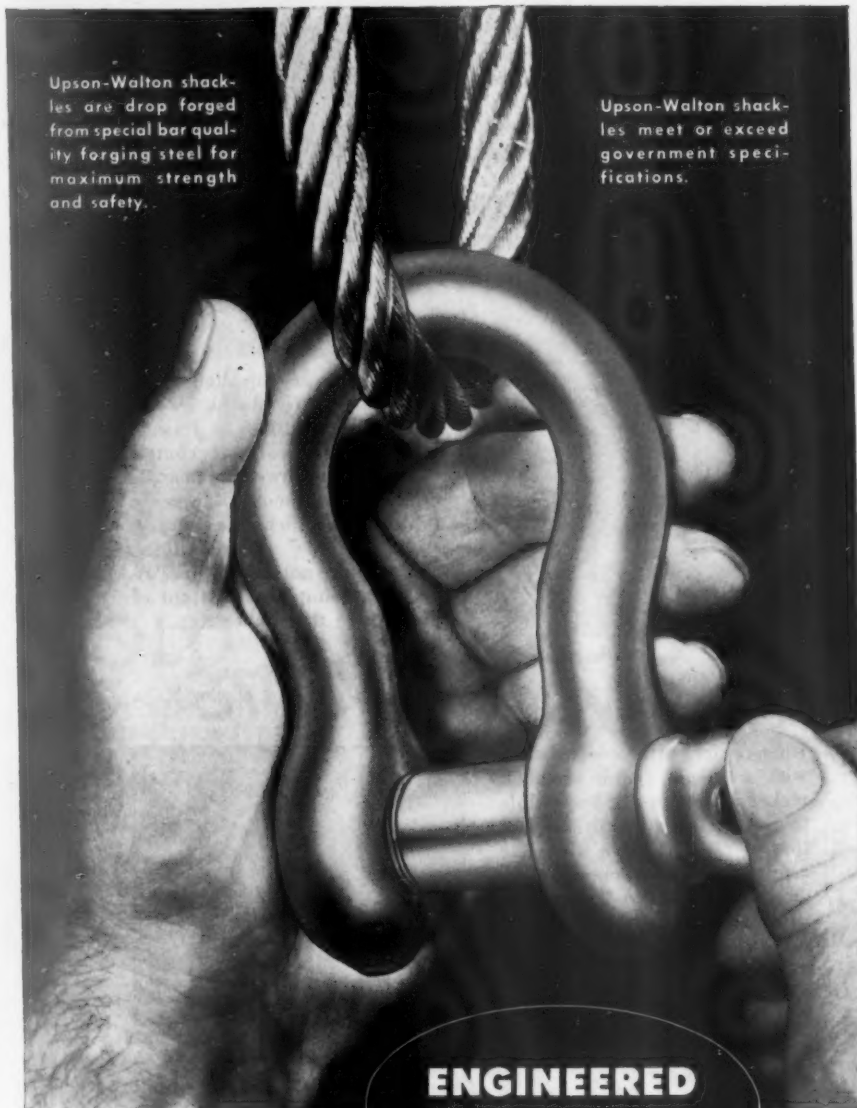
CHICAGO • ST. LOUIS • DETROIT • SAN FRANCISCO • LOS ANGELES • MONTREAL

**K & E**

partners  
in creating

# UPSON-WALTON

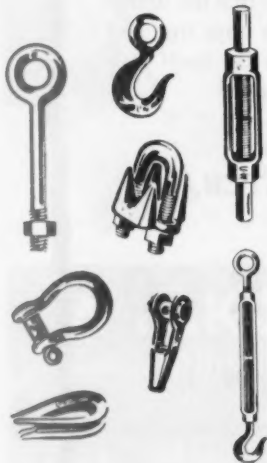
## wire rope fittings



Upson-Walton shackles are drop forged from special bar quality forging steel for maximum strength and safety.

Upson-Walton shackles meet or exceed government specifications.

**ENGINEERED  
FOR SAFETY**



Upson-Walton shackles are made with round or screw pin, in anchor or chain types, hot galvanized or green enameled. Strengths and complete dimensions are shown in free catalog. Your distributor carries a wide selection for your convenience.



### THE UPSON-WALTON COMPANY

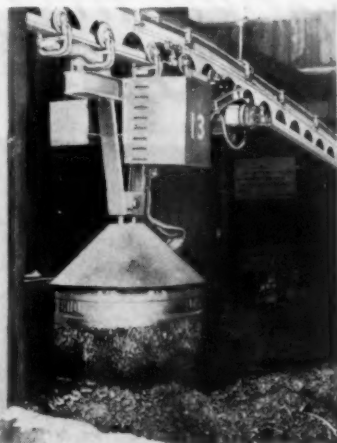
12500 ELMWOOD AVENUE • CLEVELAND 11, OHIO  
New York • Chicago • Pittsburgh

MANUFACTURERS OF WIRE ROPE • FITTINGS • TACKLE BLOCKS—ESTABLISHED 1871

For More Information Circle No. 267 on Inquiry Card—Page 17

### Magnet Carrier Gathers Scrap And Moves It Without Operators

An automatic magnet-carrying system engineered and built by the Cleveland Tramrail Division of The Cleveland Crane & Engineering Co., Wickliffe, Ohio, picks up and moves one carload of metal chips and shavings daily without attendants.



After dumping a load, the carrier reverses direction

The scrap comes from metal-working machines on the first floor and is emptied through chutes into two parallel tunnels in the ground below. Each tunnel has its own Tramrail track on which a carrier travels back and forth automatically. Scrap from the tunnels is delivered to a bin from where it is conveyed to railroad cars just outside of the building.

When traveling in a direction away from the bin, the magnets are in the "off" position. When going toward the bin, they are "on" and pick up the metal as they move along. When they reach the bin, the power to the magnets cuts off and their loads are dropped.

1 1 1

### U. S. Steel Set Production and Sales Records in '53

United States Steel Corporation, in its 1953 Annual Report, accounts for a record-breaking year of production and sales. But it carries a warning of the pronounced effects of double taxation of stockholders' dividends on the country's efforts to maintain high employment and a stabilized dollar.

The report states that U. S. Steel's production in 1953 reached an all-time high. With new and expanded facilities in production, U. S. Steel produced 35.8 million net tons of ingots and castings, operating at a

(Please turn to page 240)

# For every job in every industry...

## U.S. INDUSTRIAL GLOVES



**PROVEN BEST BY  
WEAR TEST**



STYLE  
NO. 1375

### U. S. ROYAL NEOPRENE COATED CANVAS WITH NYLON FINISH

Combines safety, comfort and economy with the amazing qualities of Neoprene. Neoprene withstands oils, acids and corrosive chemical solutions. Resists heat, sunlight and abrasion without softening or cracking. Resists cutting. Curved finger construction and flannel lining for extra comfort. Also available in other styles and constructions. Color—Black. One size only.



STYLE  
NO. 1405

### U. S. DURA-GRIP PLASTIC COATED CANVAS

Specially compounded vinyl coating gives these gloves super abrasion-resistant qualities. Curved finger construction, flannel lining for extra comfort. For handling cement blocks, lumber, metal bars and pipes, etc. Color—Yellow. One size only. Also available in other styles for different uses.



STYLE  
NO. 129

### U. S. GRIP-SURE

Made of pure natural rubber latex. Ideal for canning and other light industrial uses. Highly resistant to most fruit and vegetable acids. Tough, yet extremely flexible. Specially designed pattern on fingers and palm for extra gripping qualities. Sizes 7 to 10 including half sizes.



STYLE NO. 102  
LIGHT WEIGHT



STYLE NO. 1398  
HEAVY WEIGHT

### U. S. INDUSTRIAL NEOPRENE UNLINED GLOVES

Made of specially compounded Neoprene to withstand oils, acids and other corrosive chemical solutions. Made with curved fingers. Extra roughened surface for positive grip. Scientifically developed to give utmost in safety, comfort, and economy. Also available in other styles.



**UNITED STATES RUBBER COMPANY • Rockefeller Center, New York**

For More Information Circle No. 268 on Inquiry Card—Page 17

APRIL, 1954

239

# how CHACE THERMOSTATIC BIMETAL gives "GYROSCOPIC-BALANCE" TO THE REPUBLIC HEAT CONTROL



A Product of  
Autogas Co.  
Bellwood, Illinois

**T**WO Chace Thermostatic Bimetal elements are used in The Republic "Gyroscopic-Balance" system for controlling room temperatures to within 1/10 degree. Instead of full on and off heat supply at delayed intervals this unit "meters" out the heat to balance perfectly the heat losses as steadily as a spinning gyroscope stands on a seal's nose.

Coupled with a three-wire thermostat, the Republic unit provides not only on and off control but also high and low flame in steps to balance heating losses accurately. The system does not need the necessary delay interval built into two-wire thermostats to prevent cycling.

Republic's system permits a floating contact in the thermostat which is sensitive to 1/10 degree and immediate action. Contact at the thermostat causes resistor (1) to heat, with a resultant bending of bimetal element (2) and, after a moment, the closing of contacts (3). This circuit opens the fuel valve to low flame. The contacts influenced by a magnetic field cannot open, thus preventing cycling.

The second set of contacts in the thermostat, sensitive to 1 to 1 1/2 degrees, causes resistor (4) to heat, bending bimetal (5). This action closes a small gas valve permitting the burner to go to high flame. Thus the rate of fuel burned changes constantly to match the varying heat recording in the room.

This is but one of the untold number of uses of Chace Thermostatic Bimetal. For a quarter of a century we have supplied leading manufacturers with thermostatic bimetals for use in products actuated by changes in temperature. If you are interested in such products, write today for our new 36-page booklet, "Successful Applications of Thermostatic Bimetal", which includes 10 pages of condensed engineering data.



**W. M. CHACE CO.**  
Thermostatic Bimetal  
1635 BEARD AVE., DETROIT 9, MICH.

For More Information Circle No. 269 on Inquiry Card—Page 17

(Continued from page 238)

rate of 98.4 per cent of capacity. This was 128.6 per cent of the production rate averaged during 1947-1949. The previous record was established in 1951 when 34.3 million tons were produced.

During the year, an all-time record of shipments totaled 25.1 million tons, the report tabulated. It is noted that for each share of common stock, about one ton of steel was shipped into the market.

Findings of an extraordinary survey covering the incomes and Federal taxes of 280,000 individual U. S. Steel stockholders disclose that double taxation claimed more than two-thirds (68 cents) of the potential dividend dollars earned by U. S. Steel. This, the report stresses, is dealing a serious blow at incentive to invest in private industry.

Income for 1953 was \$222.1 million, representing a return of 5.8 per cent on sales, as compared with income of \$143.6 million in 1952 and a return of 4.6 per cent on sales, according to the report. As 1952 was characterized by a two months' strike, a comparison is not of especial significance. However, in 1951 U. S. Steel operated at full capacity and its income was \$184.3 million and its sales were greater than in any previous year.

Sales in 1953 were \$3,861.0 million compared with \$3,137.4 million in 1952 and \$3,524.1 million in 1951.

## Lower Copper Demand Brings Cut in Kennecott Operations

A substantial reduction in the demand for copper has forced the Utah Copper Division of Kennecott Copper Corporation to curtail its operations to a 6-day week.

The mine, mills and refinery have been operating 7 days a week, and employees have been working 48 hours a week. Under the new schedule, operations will be closed down Sundays and employees will work 40 hours a week.

The cut in tonnage at Utah Copper Division represents about a 14% reduction in output. Production is currently running at 580,000 tons of ore per week, and under the new schedule 498,000 tons will be mined and milled weekly.

Utah Copper Division now employs approximately 5600 workers, and the curtailment will not cause any employee layoffs, Mr. Pett said.

Similar curtailments have been made at Kennecott's New Mexico, Arizona and Nevada properties.

For More Information Circle No. 270  
on Inquiry Card—Page 17 ➔

PURCHASING



**For replacement bearings...**

**MAKE  
THE  
ONE  
SURE  
CHOICE!**

*Insist on genuine Hyatts! When you buy the bearings in the yellow and blue Hyatt packages, you're getting exact duplicates of original, specified bearings. Hyatt Hy-Loads, preferred for the vital load-carrying positions, are factory-installed in thousands of vehicles every day. And the new self-aligning, dual-purpose, Barrel Bearings—built only by Hyatt—are now widely used in passenger cars, trucks and farm machinery. Take a tip from the factory specialists—always replace a Hyatt with a Hyatt!*

# HYATT

STRAIGHT ☐ BARREL ☐ TAPER ☐

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, N. J.

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE



DISTRIBUTED BY DEALERS EVERYWHERE

**ROLLER BEARINGS**

APRIL, 1954

For More Information Circle No. 272 on Inquiry Card—Page 17

243



# PAGE Manufacturers' Wire



# PAGE makes them all

**YOU draw the Shape...**  
**PAGE will draw the Wire**

Cross-sectional areas up to .250" square;  
widths up to 3/8"; width-to-thickness ratio  
not to exceed 6 to 1.

Tell us the way you want it. We'll follow  
your specifications.

*Write or wire today*

**ACCO**



**Page Steel and Wire Division  
AMERICAN CHAIN & CABLE**

Monessen, Pa., Atlanta, Chicago, Denver, Detroit,  
Los Angeles, New York, Philadelphia, Portland,  
San Francisco, Bridgeport, Conn.

**plus  
Welding  
Electrodes  
Wires  
Rods**

For More Information Circle No. 273 on Inquiry Card—Page 17

## Rockwell Says Congress Hampers Efficient Military Buying

American military leaders interested in economizing on military budgets are being prevented from doing so by fear of Congressional retaliation, a former special assistant to the Secretary of Defense said recently.

Col. Willard F. Rockwell, chairman of the board of Rockwell Manufacturing Company and Rockwell Spring and Axle Company, made the charge recently in a talk at the annual dinner of the Pittsburgh Traffic Club.

"In 1952," Col. Rockwell said, "Congress demanded that the Defense Department set up one agency to plan and provide improved procurement methods for uniforms, apparel, bedding and footwear for all the military services in order to prevent a repetition of the many previously reported cases where lack of standards, high costs due to interservice competition for sources of supply and other blunders had shown vast waste of funds.

"This agency was set in operation on October 1, 1952, and was so successful in reducing costs and government payrolls that Congressmen washed it out by the simple device of inserting a single paragraph in the 1954 budget stating that no funds were to be used to continue this new agency after Dec. 31, 1953.

"That action, taken without a formal Congressional committee investigation does prove that Congress may chastise Pentagonians who introduce too much economy and efficiency, even when so directed by Congressional orders."

"Top Pentagon officials have learned," Col. Rockwell added, "that they must deliberately waste money in slow years in order not to 'lose' part of their annual appropriations and thus jeopardize national defense.

"Pentagonians say," he explained, "that if they spend 10 per cent less than is appropriated in any fiscal year, Congress will cut their next budget estimate by 10 per cent and then take off another 10 per cent to teach them a lesson—and they have records to show that has happened in the past.

As an example of this deliberate waste to prevent cuts in appropriations, Col. Rockwell cited the purchase by the Pentagon in 1951 of 7,000 passenger cars, "which have been stockpiled in dead storage ever since.

"This silly transaction," he said,

(Please turn to page 246)



Continental Motors Corporation  
\*Muskegon Plant, Muskegon, Mich.

## Grease-lubricated motors at this Continental Motors plant\* *defy wear with*

### **SHELL ALVANIA GREASE**



The Muskegon Plant of Continental Motors Corporation runs thousands of electric motors under extremely varied conditions . . . on Shell Alvania Grease. In addition to outstanding wear reduction, Shell Alvania is effecting savings by cutting down inventories, bookkeeping and storage space.

Other plants from coast to coast are getting the same outstanding lubrication at greatly reduced cost with Shell Alvania Grease.

#### Look at these advantages:

Shell Alvania Grease pumps freely in cold temperatures, yet will not run out of bearings under excessive heat.

Shell Alvania Grease has extremely high oxidation stability.

You'll find that Shell Alvania Grease extends time between greasings . . . a substantial saving in labor and grease.

Simple inventory . . . just the one grease to stock and apply.



Why not let us show you how Shell Alvania Grease can give you a more efficient lubrication program with greater economy. For further information write to Industrial Lubricants, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.—or 100 Bush Street, San Francisco 6, California.

## **SHELL ALVANIA GREASE**

*The True Multi-Purpose Industrial Grease*



For More Information Circle No. 274 on Inquiry Card—Page 17

# "Standard"

**Serves** Manufacturers Who Use  
All Shapes and Sizes of  
**MECHANICAL STEEL TUBING**

## SIZE AND THICKNESS CHART of Electric Weld Tubing for Mechanical Use

TUBE DIAMETER "O.D. SIZE	MAXIMUM WALL		MINIMUM WALL	
	DECIMAL	B. W. GAUGE	DECIMAL	B. W. GAUGE
1/2"	.065"	16	.028"	22
5/8"	.065"	16	.028"	22
3/4"	.065"	16	.028"	22
7/8"	.083"	16	.028"	22
1"	.109"	14	.028"	22
1-1/8"	.109"	12	.028"	22
1-1/4"	.134"	12	.028"	22
1-3/8"	.134"	10	.028"	22
1-1/2"	.148"	10	.028"	22
1-5/8"	.148"	9	.035"	20
1-3/4"	.148"	9	.035"	20
1-7/8"	.165"	8	.035"	20
2"	.165"	8	.035"	20
2-1/4"	.180"	7	.035"	20
2-1/2"	.203"	6	.035"	20
2-3/4"	.220"	5	.049"	18
3"	.220"	5	.049"	18
3-1/4"	.238"	4	.049"	18
3-1/2"	.238"	4	.049"	18
3-3/4"	.250"	3	.065"	16
3-7/8"	.250"	3	.083"	14
4"	.180"	7	.083"	14
4-1/4"	.250"	3	.083"	14
4-1/2"	.250"	3	.083"	14
4-3/4"	.250"	3	.083"	14
5"	.180"	7	.083"	14
5-1/2"	.180"	7	.083"	14

Intermediate sizes within the range indicated can also be manufactured. Please consult us for sizes not listed.

Manufacturers requiring tubing for civilian or defense production prefer "Standard's" Electric Weld Steel Tubing for many reasons. "Standard's" Electric Weld is produced in one of the most versatile and complete mills of its kind in the world. "Standard's" 33 years of specialized tubing "know-

how", and monthly production of millions of feet of stainless and carbon steel tubing, in wide range of sizes and gauges, assure you of utmost satisfaction. No problem of tolerance, precision or severest application for mechanical, structural, or pressure tubing is too difficult.

**STAINLESS STEEL TUBING**  
1/4" to 4 1/2" O.D. . . . .020 to .154 wall

ABOVE CHART COVERS  
ROUND CARBON STEEL  
TUBING . . .

EQUIVALENT SQUARES,  
RECTANGULARS AND  
SPECIAL SHAPES ARE  
ALSO AVAILABLE.

**THE STANDARD TUBE CO.**

Detroit 28, Michigan  
Welded Tubing Fabricated Parts

STANDARDIZE WITH STANDARD — IT PAYS

(Continued from page 244)

"wasted 15 million dollars, with no benefit to anyone but our country's enemies."

"Bureaucracy in this country is not limited to Congress," Col. Rockwell emphasized. "Professional military bureaucrats," he said, "are prone to use irrelative, irresponsible, misleading and mischievous statements to confuse the issues in the interest of their own branches of the service."

## What Makes a Salesman's Job Tough in New York These Days

Price-cutting in various forms, buyer hesitancy to place firm orders, customer reluctance to change supplies and difficulty in getting dealer cooperation are the sales obstacles which outside salesman find toughest to overcome in today's markets. Hand and hand with them goes an admitted need for better selling ability to cope with these and lesser obstacles.

These are the findings of a survey recently undertaken by The City College Baruch School of Business in planning its evening courses in salesmanship and sales management for 1954.

"The survey, while reflecting the experience and opinion of 57 salesmen and 2 sales managers selling 42 different products in the New York metropolitan area, also showed some indication of what form sales management policy might need to take in 1954", continues Dr. Love. "The detailed reactions of buyers at all levels of trade were summed up in the one word—caution—a state of mind resulting from uncertainty as to economic developments and much talk of recession or decline."

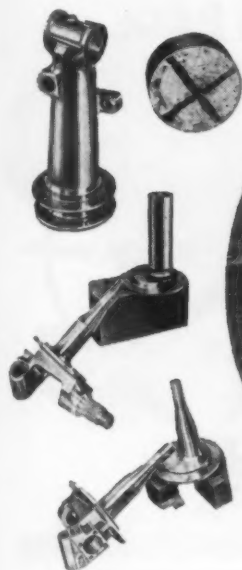
The questionnaires, filled out by active salesmen now in training at the College also brought evidence of a trend on the part of customers to demand many concessions and better services in their effort to keep inventories at a minimum. Some of the demands were for quicker deliveries; multiplied small orders; more returns and exchanges; and extended terms.

The survey pointed to the need for special retraining of salesmen to meet these new resistances—training aimed at rebuilding the confidence of both salesmen and customers, new ability to satisfy specific customer needs, and most of all the need for sharpened skills in "how to ask for the order and close sales."

For More Information Circle No. 275 on Inquiry Card—Page 17

# Safe Driving at 154 m.p.h...

thanks to **FRASSE** alloy steels



Courtesy: B. S. Cunningham Co.

Clocked at 154 mph, this American Cunningham won top honors in its class at Le Mans, France. Expert driving—plus expert design—brought home the bacon.

The near-endless abuse of a grueling 24 hour grind demanded foresight in materials selection. Parts failure could have been costly . . . perhaps fatal.

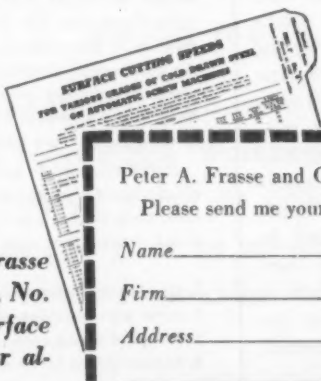
To meet rigid design specifications, the maker consulted Frasse Technical Service. Frasse engineers prescribed a heat treated, 40 carbon

alloy—shipped direct from warehouse stock. Axles, spindles, brake parts, steering arms—all vital parts—were machined from Frasse steels. The result attests to their perfect performance.

When you're faced with an alloy problem—let Frasse know-how prescribe for you. Frasse alloy steels include all the popular grades—in a wide range of sizes—and Frasse Technical Service stands ready to assist you in their application. Why not let this combination help make your product a winner?

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Get this handy Frasse data chart Sec. F, No. 6. It includes surface cutting speeds for alloy and carbon steels. You'll find it ideal for shop or estimating use. Mail the coupon for your free copy—today.



Call **FRASSE** 1<sup>st</sup> for **ALLOY STEELS**

Peter A. Frasse and Co., Inc., 17 Grand Street, New York 13, N. Y.

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Please send me your free data chart Sec. F, No. 6.

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Firm \_\_\_\_\_

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For More Information Circle No. 278 on Inquiry Card—Page 17

APRIL, 1954

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# THE CORD SET

... Protecting Your Product's Reputation!



Consumer goodwill, which determines the reputation of your product, depends on "The Vital Link between Power and Performance". . . the cord assembly you use!

That's why a cord set from Riverside is the best investment you can make. You save assembly time with easily installed pre-fabricated wiring. You avoid the upkeep of specialized production equipment.

But most important . . . you install "Reputation Insurance" on every assembly where you use a Riverside cord set! Take advantage of our specialized engineering experience and production facilities. Send samples or prints for prompt recommendations and a firm quotation without obligation.

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AND ELECTRICAL SUPPLY COMPANY  
10219 Michigan Ave. • Dearborn, Mich. • Phone Tiffany 6-6800

WIRING HARNESSES AND ASSEMBLIES • CORD SETS  
HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES  
RELAYS • MOLDED RUBBER PRODUCTS

For More Information Circle No. 279  
on Inquiry Card—Page 17

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## Pig Iron and Ferroalloy Production Sets Record

The production of pig iron and blast furnace ferroalloys set a record in 1953 at 75,842,759 net tons, American Iron and Steel Institute has reported. This was an increase of nearly 13.7 million tons over 1952 and of 4.6 million tons over the previous record, set in 1951.

The year's output of pig iron and blast furnace ferroalloys was 95.5% of blast furnace capacity, compared with 84.2% in 1952, year of the long strike, and 98.3% in 1951.

The production of alloy steel, including stainless, was 10,238,345 net tons of ingots and steel for castings in 1953, the highest for any year outside of three all-out war years, 1942-44. The 1953 production was 1.1 million tons higher than in 1952 and 100,000 higher than in 1951.

1 1 1

## Shell Chemical Epon Resin Plant on Stream

The world's largest epoxy resin plant has just been brought on stream in Houston, Texas by Shell Chemical Corporation. The plant will triple the company's supply of Epon resins, materials in great demand in both the surface coatings and the structural fields.

As part of this same expansion Shell Chemical is also opening a bis-phenol-A plant, which makes this new unit independent of outside suppliers for this component of Epon resins. The manufacture of epichlorohydrin, the other chief component of these resins, was pioneered by Shell Chemical.

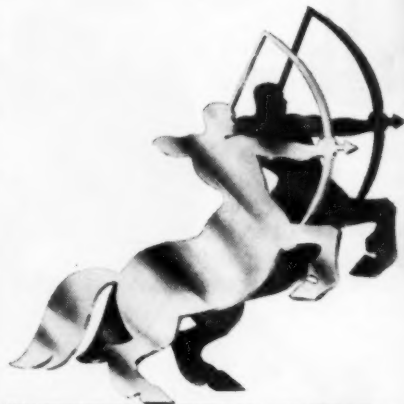
Since they were first made available in 1947 these resins have had an acceptance that has been spectacular even in the fast-growing resins and plastics field. Paints formulated on Epon resins are being used by virtually all washing machine manufacturers, due primarily to their unusual resistance to alkalis and detergents. For the same reasons they are being adopted in a variety of other applications. Because of their remarkable adhesive qualities they have found wide industrial application in joining metals, glass and other materials.

FOR FURTHER INFORMATION  
ON PRODUCTS IN THIS ISSUE  
PLEASE USE INQUIRY CARD

ON PAGE 17

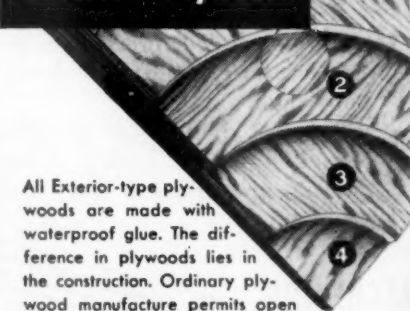
**CONVENIENCE!  
QUICK DELIVERY!  
SERVICE!**

**ON PAGE  
301**



For More Information Circle No. 280  
on Inquiry Card—Page 17

## The Difference In "Exterior" Plywoods



All Exterior-type plywoods are made with waterproof glue. The difference in plywoods lies in the construction. Ordinary plywood manufacture permits open defects and knotholes in inner plys—resulting in troublesome "core gaps."

SUPER-Harbord fir plywood and Harbortite plastic-faced plywood are made with extreme care. Only Harbor's special waterproof, boil-proof, freeze-proof glue is used. In addition:

1. Only prime heartwood used, no sapwood.
2. Inner plys machine-edged and butted.
3. All solid wood core—no gaps.
4. Rehumidified for dimensional stability.

**SUPER Harbord and Harbortite**  
are manufactured only by

**HARBOR PLYWOOD CORPORATION**  
ABERDEEN WASHINGTON

Sales Offices and Warehouses in Aberdeen, Atlanta, Chicago, Cincinnati, Indianapolis, Jacksonville, Los Angeles, Oakland, San Francisco and Tampa.

For More Information Circle No. 281  
on Inquiry Card—Page 17

PURCHASING

# YOU SAVE WHEN YOU USE OILITE FINISHED MACHINE PARTS



~~MAJOR FACTORY COSTS~~  
~~Machine Tools~~  
~~Tooling~~  
~~Skilled Operator~~  
~~Supervision~~  
~~Floor Space~~  
~~Scrap~~  
~~Time~~



**Sure...** these intricate parts can be machined  
 out of solid metal. That's the expensive way.



**But...** these **FINISHED MACHINE PARTS** are  
 being made by **OILITE** at a Fraction of the Cost.

Oilite Finished Machine Parts serve the same purpose as conventional "machined" parts. Their performance is just as good, often better, because they can be self-lubricating and made to closer precision tolerances.

Recent achievements by Oilite Research have materially broadened the scope and application of Oilite — Products of Metal Powders.

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**Call an Oilite Engineer.** Let him develop your ideas. He will suggest ways and means for decreasing your part costs and show you how to attain other important goals.

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*Oilite Products of Metal Powders Include:*  
 BEARINGS, FINISHED MACHINE PARTS, CORED AND  
 SOLID BARS, PERMANENT FILTERS AND SPECIAL UNITS

For More Information Circle No. 282 on Inquiry Card—Page 17

# Personalities



## IN THE NEWS

**A. C. Lundgren**, Director of Purchases for the Thew Shovel Co., Lorain, Ohio, has been elected a Vice President of that company. Mr. Lundgren joined



**A. C. Lundgren**

Thew in 1911 and became a member of the purchasing department three years later.

Joseph T. Ryerson & Son, Inc., Chicago, has appointed **Martin J. Hartigan** as Manager of Supply Purchases. Mr. Hartigan has been with Ryerson since



**Martin J. Hartigan**

1917. He has been a member of the Purchasing Agents Association of Chicago for 23 years.

**Henry Breunich, Jr.**, has been named General Purchasing Agent of the Robert Gair Co., Inc., New York City, succeeding George R. Griesel, who retired. Mr. Breunich joined the Gair Company 20 years ago as an industrial engineer. He later transferred to production and purchasing. In 1940 he joined the general purchasing department.

**John S. Babi** is the new Director of Purchases for the Bulova Watch Co., Inc., Jackson Heights, N. Y. Mr. Babi will head up the purchasing departments of the Jackson Heights, Woodside, Maspeth and Valley Stream plants, reporting directly to A. Bulova, chairman of the board of directors. Mr.



**John S. Babi**

Babi has previously been associated with Scovill Manufacturing Co., American Bosch Corp., Eisemann Magneto Corp., and Adams Laboratories, Inc., all in a purchasing capacity.

Plastics Division, Monsanto Chemical Co., St. Louis, Mo., has named **John O. Printy** as Manager of Purchasing. **W. E. Decker** has been made Assistant Manager of Purchasing. Mr. Printy was formerly Manager of Purchases for Monsanto's Everett, Mass., plant. He joined the company in St. Louis in 1946 as Purchasing Agent. Mr. Decker joined Monsanto in 1929 and has been serving as Manager of Purchases in the Texas City, Texas, plant.

**William C. Maull** has been appointed Assistant Purchasing Agent of Bristol-Myers Products Division, New York City. He joined the company in 1930



**William C. Maull**

and has been associated with manufacturing department at the firm's Hillside, N. J., plant since 1946.

**John M. Thullen** is now Purchasing Agent for all industrial raw materials, production parts, services, finished stores and general factory supplies for



**John M. Thullen**

Detroit Stamping Co., Detroit. Mr. Thullen previously was a special contract negotiator and buyer for Harry Ferguson Co.

# Amazing performance of **MACKLIN M.M.** Carbide Cutting Wheel goes far beyond highest expectations



**Y**es, sensational economies result from use of this revolutionary wheel. One user reports increased wheel life of 300% with a decrease in both wheel and labor costs. Another states that with equal wheel life the MACKLIN M.M. Wheel produced twice as many tools therefore cutting labor costs 50%. A third asserts grinding time was only 20% of usual with grinding costs reduced by 55%. Many report faster stock removal with grinding time greatly reduced and finishing costs cut up to 50%.

*Call your Macklin distributor, or a Macklin field engineer, and let them prove how, you too, can get these cost and labor saving results.*

**See this great wheel in operation at the A.S.T.E. Show — Booth No. 1409.**

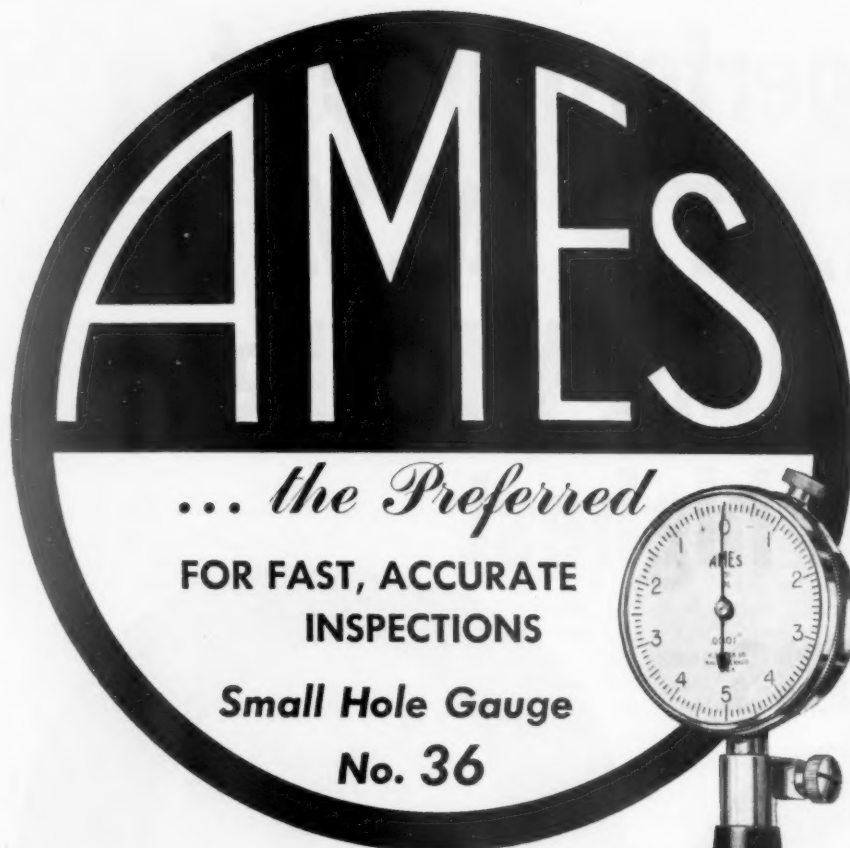
## **MACKLIN COMPANY**

**Manufacturers of GRINDING WHEELS AND OTHER ABRASIVE PRODUCTS**

**JACKSON, MICHIGAN**



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Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The Ames No. 36 has extremely sensitive mechanism especially designed to eliminate "feel" in measuring. The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

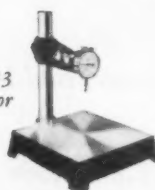
The operator has only to slide the contact in and around the hole and note the readings to determine if tolerances are being met.

The Ames Small Hole Gauge No. 36, using contacts in increments of  $1/32"$ , can check holes of  $3/16"$  to  $1"$  diameter, up to  $2"$  depth. Longer lengths and special contacts to check irregular recesses, splines, etc., can be supplied.

Ames No. 15  
Jaw Gauge



Ames No. 13  
Dial Comparator



Ames No. 516  
Dial Micrometer



Ames No. 25  
Pocket Thickness  
Measure



If you would like to have our recommendations on your measurement problem, send blueprints and specifications. Write for your free copy of catalog on Ames precision measuring instruments.



Representatives in  
principal cities.

**B. C. AMES CO.**

31 Ames Street  
Waltham 54, Mass.

Mfr. of Micrometer Dial Gauges • Micrometer Dial Indicators

Frank J. Coughlin has been appointed to the newly-created post of Director of Purchases for Niles-Bement-Pond Co., West Hartford, Conn. Mr. Coughlin, who will direct the purchasing functions of both the Pratt & Whitney



Frank J. Coughlin

and the Chandler-Evans divisions, has been with the company since 1913. He was made Assistant Purchasing Agent of Pratt & Whitney in 1928 and became Purchasing Agent in 1943.

David H. Thomas retired March 1st as Purchasing Agent for the Utah-Idaho Sugar Company, Salt Lake City, after 43 years of service with the company. He has headed the purchasing department since 1926. An active member and worker in the Purchasing Agents Association of Utah, he has consistently maintained a keen interest in the broader phases of his profession, and has a record of N.A.P.A. convention attendance equalled by few other buyers. In addition to his business activities, Mr. Thomas accepted the challenge of civic responsibility and public service as a member of the Utah State Legislature.

General Tire & Rubber Co., Akron, Ohio, has named Carl J. Adelman, Purchasing Agent, to replace the late Emil Schnedarek. Wayne N. Grubaugh is now Assistant Purchasing Agent for rubber chemicals and rubber pigment,



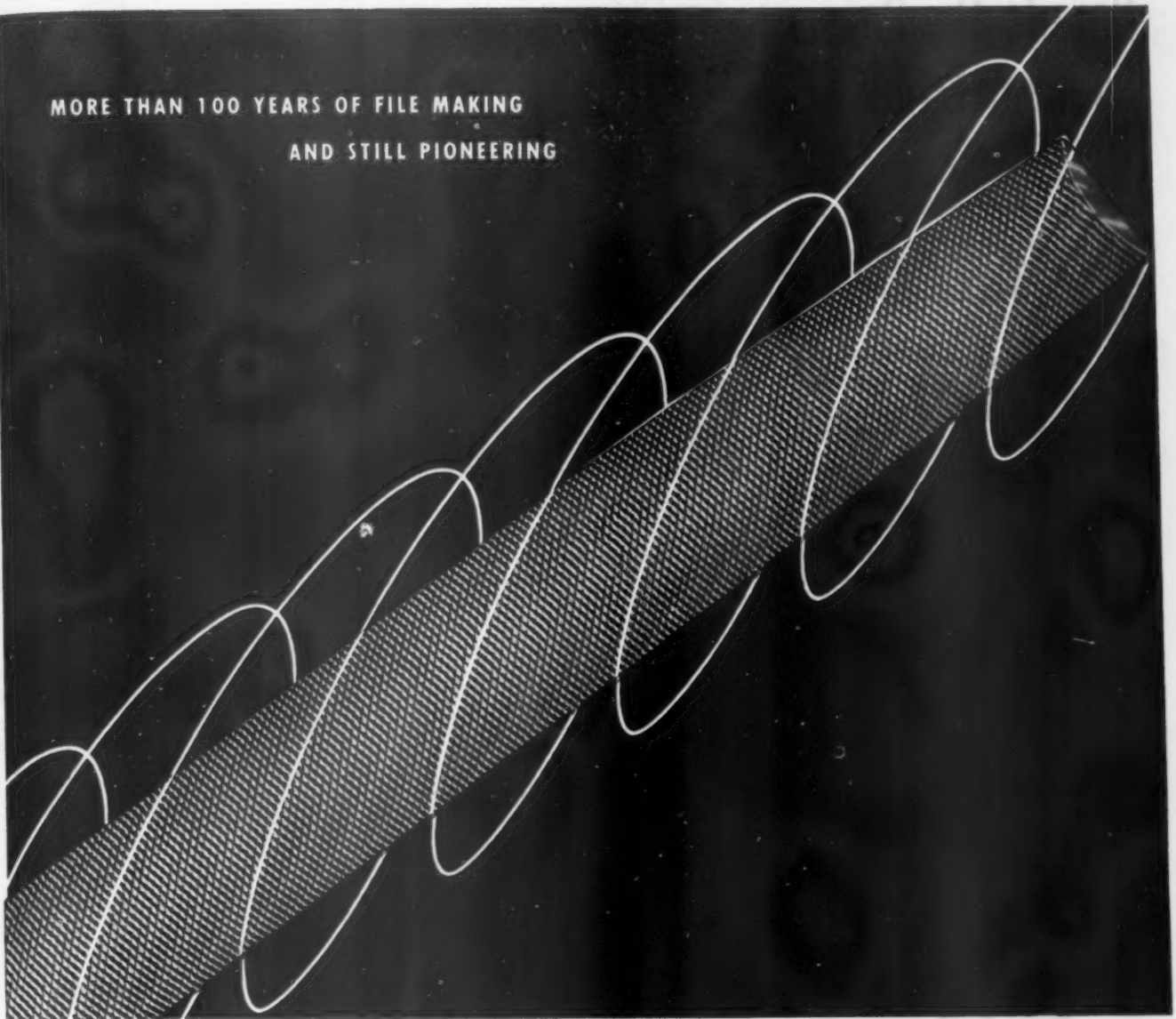
C. J. Adelman



W. N. Grubaugh

duties formerly handled by Mr. Adelman. Mr. Adelman is a 20 year veteran with General Tire and has been Assistant Purchasing Agent since 1946. Mr. Grubaugh joined General Tire in 1951.

MORE THAN 100 YEARS OF FILE MAKING  
AND STILL PIONEERING



## HELLER WAS FIRST WITH SPIRAL-CUT HALF ROUND FILES

Ordinary half round files require a skillful twisting of the file to produce smooth, even work. Heller engineering has removed this human element from good file performance with exclusive Spiral-Cut Half Round Files. The necessary "rolling action" is designed right into the file. This new cutting principle is typical of Heller's continuous search for better files. By constantly testing, inspecting, improving . . . Heller guarantees file users "the best."

VIXEN

American-Swiss

NUCUT

See us at Booth 2121, ASTE Show

THESE 3 FAMOUS BRANDS ARE MADE ONLY BY

HELLER BROTHERS CO. America's Oldest File Manufacturer NEWCOMERTOWN, OHIO

YOUR HELLER DISTRIBUTOR CAN SUPPLY ALL YOUR FILE NEEDS

For More Information Circle No. 286 on Inquiry Card—Page 17

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NUCUT\* Wavy-Teeth Files

VIXEN Milled Curved Tooth Files

WAVY-TEETH\* Double Cut Mill and Saw Files

\*Registered T.M.



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Over the years leading firms have proved to themselves that to specify MALL TOOLS is to specify "satisfaction" for everyone concerned with the use and operation of power tools. The reason is that MALL means highest quality, larger selection, dependable service and prices that are lower on the average. Experienced users will verify the fact that MALL TOOLS stay on the job longer and are easier to keep on the job. Clip coupon below for full facts.



40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

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Send me full facts about MALL (Electric) (Pneumatic)

☐ Drills ☐ Grinders ☐ Screwdrivers

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Company \_\_\_\_\_

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MU-106

For More Information Circle No. 287  
on Inquiry Card—Page 17

Samuel McClenahan has been named Director of Purchasing for Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia. He joined Sharp & Dohme



Samuel McClenahan

in 1946 as acting manager of production control. He became manager of production control in 1948 and held that position until his new appointment.

Emery Industries, Inc., Cincinnati, Ohio, has appointed **Robert A. Behrmann** as Director of Purchases. He fills the post left vacant, some time ago,



Robert A. Behrmann

when K. K. Boyd was elected Vice President in Charge of Sales and Purchases.

**M. E. Hankins**, formerly Division Purchasing Agent, Northern Division, of The Texas Co., New York City, has been transferred to Divisional Purchasing Agent, Southern Division, in Houston, Texas. **W. E. Jones**, who was Assistant Purchasing Agent, Northern Division, has been promoted to Divisional Purchasing Agent of that division.

**Leeds & Northrup Co.**, Philadelphia, has announced that **Joseph E. Jennings**, formerly Assistant Purchasing Agent, is now Acting Purchasing Agent.



**NEW BLADE SOLVES  
BREAKAGE PROBLEMS**

**"Molyflex"**  
It's **Star "Molyflex"**  
**High Speed!**  
**A Clemson exclusive.**

You'll find it has all the high-speed cutting qualities of the original Star "Moly"® High Speed Power Blades, plus being highly break-resistant. Best of all, no premium cost.

Call your Star distributor today for a trial lot of Star "Molyflex" High Speed Power Blades. Rely on him also for hundreds of the other supplies you need regularly and quickly to keep your production going.

Sold Only Through Recognized Distributors.



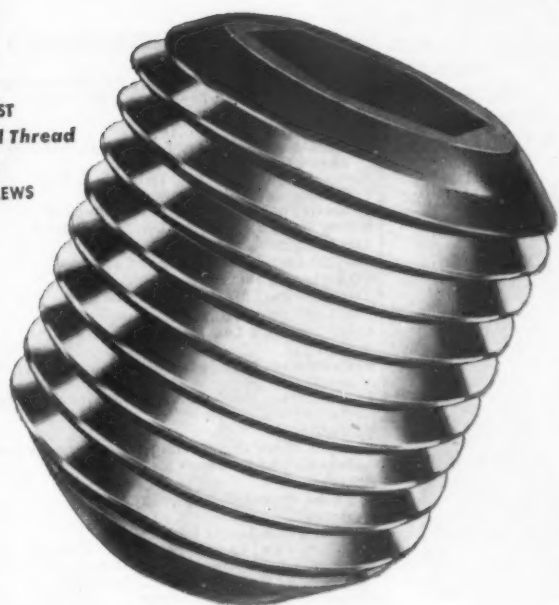
**CLEMSON BROS., Inc.**

MIDDLETOWN, N. Y., U. S. A.  
Makers of Hand and Power Hack Saw  
Blades, Frames, Metal and Wood Cutting  
Band Saw Blades and Clemson Hand and  
Power Lawn Machines.

For More Information Circle No. 165  
on Inquiry Card—Page 17

PURCHASING

THE FIRST  
Ground Thread  
SOCKET  
SET SCREWS



THE ONLY  
Size-Marked  
SOCKET  
CAP SCREWS



## SOCKET SCREWS

BUTTON HEAD

SHOULDER

PIPE PLUGS

HEX KEYS



your local Supply and Service Specialist

### In Socket Set Screws PARKER-KALON gives you

- **GROUND THREADS** — at no extra cost. Gage-like precision, mirror-smooth finish — uniform, dependable Class 3 tolerance. Mechanics like their easy starting, easy keying.
- **PROVED ASSEMBLY STRENGTH** The "proving ground" is the millions of assemblies made by thousands of satisfied users of P-K Socket Screws, whose products are used everywhere, many under the toughest conditions of vibration.

### In Socket Cap Screws PARKER-KALON gives you

- **SIZE-MARK** — offered only by P-K. Incised on the head of each screw, it saves time and wasted screws when sizes get mixed up, prevents errors by green help. Maintenance and service men like Size-mark, it helps in reassembling.
- **GEAR GRIP** Meshing firmly with finger tips, it prevents slipping and fumbling when hands are oily, speeds starting.
- **MAXIMUM STRENGTH** Head, socket, and threads are accurately formed by Parker-Kalon's cold-pressure process. Steel structure "flows" to conform to all contours, assures maximum strength at points of greatest stress.

### In all Socket Screws PARKER-KALON gives you

- **GUARANTEED FIRST QUALITY** Based on tests and inspections at every step in production — an exacting routine of quality control supervised by P-K laboratory Technicians.
- **FULL RANGE OF STYLES AND SIZES** You'll find any Socket Screw you need, NC or NF, in P-K's complete line, and Hex Keys in all sizes, and in several handy sets. Ask your P-K Distributor for the P-K Price List, Catalog, — any information you need. Slide chart Socket Screw Dimension Finder Free.



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APRIL, 1954

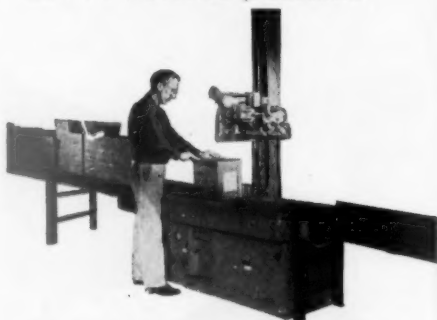
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## how two companies cut packing costs

**Read this if you ship in corrugated or fibre cartons!** It tells how two well known manufacturers cut packing costs . . . by thousands of dollars annually . . . with International Carton-Stapling Machines. Here's the story:



**'28,000 saved** by Harrison Steel Cabinet Co., manufacturers of kitchen wall, base and sink cabinets. Harrison improved working conditions . . . doubled production.



**'20,000 saved** by Uarco, Inc., manufacturers of business forms. Closing 2,500 cartons formerly took 48 man-hours . . . now it takes 12 man-hours.

**40 models...from portable units to big multi-head automatic models. Write for details.**



### INTERNATIONAL STAPLING MACHINES

INTERNATIONAL STAPLE  
& MACHINE COMPANY

804 E. Herrin St., Herrin, Illinois

For More Information Circle No. 290  
on Inquiry Card—Page 17

Clifford G. Strote has been appointed Director of Purchases of American Chain & Cable Co., Inc., Bridgeport, Conn. He will handle all purchasing for the 16 divisions of the company and will headquarter in Bridgeport. Previously, Mr. Strote was employed by



Clifford G. Strote

Sundstrand Adding Machine Co., National Lock Co. and George D. Roper Stove Co. For the past 12 years he has held various executive purchasing assignments with the United States Steel Corporation.

Charles L. Hammond has been promoted to Assistant Purchasing Agent for McCulloch Motors Corp., Los Angeles. Previously Chief Buyer for the



Charles L. Hammond

organization, Mr. Hammond started with the company in 1946 as a truck driver.

Mathieson Chemical Corp., Baltimore, Md., has named **Ralph C. Phillips** as Administrative Assistant to William J. Heckman, Director of Purchasing.

**Archie H. J. Chadwick** has been promoted to Assistant Purchasing Agent of the western division of Tide Water Associated Oil Co., San Francisco. He succeeds Alfred Urry, who is retiring after more than 40 years of service with the company.

### REYNOLDS DISTRIBUTORS

#### ALABAMA

Arnold-Brown Metals & Supply Co., Birmingham  
Southern States Iron Roofing Co., Birmingham

#### CALIFORNIA

Brasco Metals, Inc., Los Angeles  
Clingan & Fortier, Inc., Fresno, San Francisco and  
Vernon (Ingot also)

Turner Metal Supply Co., (Wire, Rod, Bar)  
Huntington Park

Union Hardware & Metal Co., Los Angeles  
United States Steel Supply Div., Los Angeles

#### COLORADO

Salt Lake Hardware Co., Grand Junction

#### CONNECTICUT

American Steel & Alloys Corp., Hartford

#### DISTRICT OF COLUMBIA

Lyon, Conklin & Co., Inc., Washington

#### FLORIDA

Horne-Wilson, Inc., Jacksonville, Miami, Orlando  
and Tampa

Southern States Iron Roofing Co., Jacksonville, Miami,  
Orlando and Tampa

#### GEORGIA

Southern States Iron Roofing Co., Albany, Atlanta,  
Augusta and Savannah

#### IDAHO

Salt Lake Hardware Co., Boise

#### ILLINOIS

Aluminum Distributors Inc., Chicago  
J. G. Braun Co., (Architectural only) Chicago

Sipi Metals Corp., (Ingot only) Chicago  
United States Steel Supply Div., Chicago

Benjamin Wolff & Co., Chicago

#### INDIANA

Kasle Steel Corporation, Elkhart

#### KENTUCKY

Southern States Iron Roofing Co., Louisville

#### LOUISIANA

Southern States Iron Roofing Co., New Orleans

#### MARYLAND

Clendenin Bros., Inc., Baltimore

Lyon, Conklin & Co., Inc., Baltimore

#### MASSACHUSETTS

Bay State Refining Co., (Ingot only) Chicopee Falls  
Arthur C. Harvey Company, Boston

#### MICHIGAN

Kasle Steel Corporation, Detroit and Grand Rapids  
McDonnell Bros., Inc., (Architectural only) Detroit

Meier Brass & Copper Co., Detroit

Milton A. Meier Co., (Ingot only) Detroit and Grand  
Rapids

#### MINNESOTA

MacArthur Co., (Architectural only) St. Paul

United States Steel Supply Div., St. Paul

Vincent Brass & Copper Co., Minneapolis

#### MISSOURI

American Alloys Corp., (Ingot only) Kansas City

Industrial Metals, Inc., Kansas City

#### NEW JERSEY

Barth Smelting Corp., (Ingot only) Newark

Edgcomb Steel Corporation, Hillside

Mapes & Sprawl Steel Co., Union

#### NEW YORK

Barth Smelting Corp., (Ingot only) Newark, N. J.

J. G. Braun Co., (Architectural only) New York

Edgcomb Steel Corporation, Hillside, N. J.

Mapes & Sprawl Steel Co., Union, N. J.

Ontario Metal Supply, Inc., (Wire, Rod, Bar) Rochester

#### NORTH CAROLINA

Southern States Iron Roofing Co., Raleigh

#### OHIO

The Atlas Metal Co., (Ingot only) Cleveland

The G. A. Avril Company, (Ingot only) Cincinnati

Bridgeport Brass Co., (Wire, Rod, Bar) Cleveland

Kasle Steel Corporation, Cleveland

Mutual Manufacturing & Supply Co., Cincinnati

Vorrs Brothers, Inc., Columbus

#### OREGON

Woodbury & Company, Coos Bay, Eugene, Medford  
and Portland

#### PENNSYLVANIA

Athas Steel Service Co., Philadelphia

Lesco Corporation, Pittsburgh

McDermott Metals Co., Inc., (Architectural only)  
Philadelphia

Merchant & Evans Co., Philadelphia

Pennsylvania Industrial Supplies Co., Inc., (Wire,  
Rod, Bar) Pittsburgh

Potts-Farrington Company, Philadelphia

Nathan Trotter & Co., Inc., (Ingot only) Philadelphia

#### SOUTH CAROLINA

Southern States Iron Roofing Co., Columbia

#### TENNESSEE

Southern States Iron Roofing Co., Memphis and  
Nashville

#### TEXAS

Moncrief-Lenoir Mfg. Co., Dallas, Harlingen,  
Houston, Lubbock, San Antonio and Temple

Vinson Supply Co., Dallas, Odessa and Snyder

#### UTAH

Salt Lake Hardware Co., Salt Lake City

#### VIRGINIA

Southern States Iron Roofing Co., Richmond

#### WASHINGTON

Clingan & Fortier, Inc., Seattle

#### WISCONSIN

Benjamin Wolff & Co., Milwaukee

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**THIS "PEDIGREE"**  
**ASSURES COMPLETE**  
**QUALITY CONTROL**  
**BEHIND EVERY ITEM IN THE NEW**  
**M·S·A FIRST AID KITS**

Maximum freshness, sterility, and purity in every Unit "D" package in the New M.S.A. First Aid Kit is certified by M.S.A.'s Modernization Program. The latest and most scientific devices and methods for inspecting, testing, sterilizing, and manufacturing are constantly at work to maintain the highest standard in First Aid Kit quality and performance.

To be sure of INDIVIDUAL responsibility, the best guarantee of product protection, a Quality Control Number is stamped on every Unit "D" package. This number identifies the "pedigree" clear back through our every operation.

Our Modernization Program has been extended to the "All-Weather" steel case, package design, color keying of labels for antiseptics, burn treatments and many others, to meet Pharmaceutical standards. There's no doubt about it . . . the New M.S.A. "All-Weather" First Aid Kit is Big News . . . something you don't want to miss. Write for details, today; or better yet, ask your M.S.A. man for a demonstration.



**MSA**  
**SAFETY EQUIPMENT HEADQUARTERS**  
**MSA**

Call the M.S.A. man on your every safety problem . . . his job is to help you

**MINE SAFETY APPLIANCES CO.**

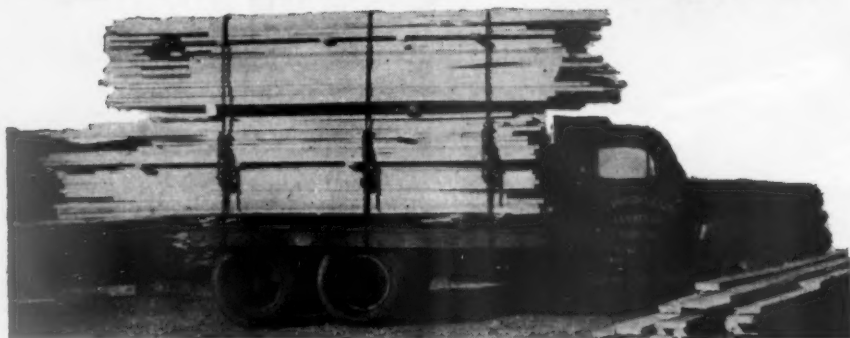
201 North Braddock Avenue, Pittsburgh 8, Pa.

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**There's never been anything like**



# LAUGHLIN'S Load Binder



## BRAND NEW

new design, new economy,  
new convenience.

## MORE USEFUL

one binder does the work of two.

## GREATER SAFETY

drop forged strength plus non-slip locking.

## HERE'S THE STORY:

The new LAUGHLIN LOADBINDER is a sturdy, drop forged, heat treated steel unit available in two sizes, each of which can use four different hook sizes. You buy only one handle assembly, attach two Laughlin clevis grab hooks to fit your chain. Change hooks in a jiffy with pliers or screwdriver.

Stronger, too, because swivel tongue swings on end of slotted jaw, won't spread under strain. Safe, because a positive cam lock action keeps it shut.

#1 Binder: U.T.S. 22,000 Lbs. | #2 Binder: U.T.S. 32,000 Lbs.  
Hook sizes:  $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{7}{8}$ " | Hook sizes:  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ "

Laughlin Clevis Grab Hooks are stocked by leading Industrial Supply, Wholesale Hardware, Oil Field, and other Distributors. Ask your distributor for information about the new loadbinder, or write for 4-page folder. It has complete description, specifications and users' comments. For a complete listing of 1500 types and sizes of Laughlin wire rope and chain fittings, ask also for our Catalog 155.



**THE THOMAS LAUGHLIN COMPANY**

44 Fore Street, Portland, Maine

For More Information Circle No. 294 on Inquiry Card—Page 17

The American Safety Razor Corporation New York City, has appointed **David M. Nason** as Purchasing Agent. Mr. Nason was formerly associated with Piasecki Helicopter Corporation as As-



David M. Nason

sistant Director of Procurement and with the New Holland Machine Division of the Sperry Corporation and the Westinghouse Electric Corporation as Purchasing Agent.

**Frank C. Dengler**, Purchasing Agent, International Resistance Co., Philadelphia, was a guest speaker at a recent meeting of the Engineers Club of Philadelphia.

**Max Lorberbaum**, Director of Purchases for Minneapolis-Moline Co., Minneapolis, Minn., has been named a vice president. Mr. Lorberbaum began his association with the company back



Max Lorberbaum

in 1912 as an office boy of Minneapolis Steel and Machinery Co., a predecessor of the present firm. He was appointed Purchasing Agent in 1924. In 1947 he was made Director of Purchases.

McLouth Steel Corporation, Detroit, Mich., has announced that **C. Thorne Murphy**, Director of Purchases and Assistant Secretary, is now Vice President and Assistant Secretary. Mr. Murphy has been with McLouth since 1942.

For More Information Circle No. 295  
On Inquiry Card—Page 17→

**GAIR** can help

**PROMOTE YOUR PRODUCT**



with eye-appeal **PRINTING**

Attractively printed Gair shipping boxes double as sales promotion aids — giving prominent display to brand names while traveling through the channels of distribution. Prospects along the way — from factory to warehouse, to store, to home — see these sales messages.

Look around. You'll notice that products from paints to peanuts, from soaps to stoves carry colorful, well-printed identification on their shipping boxes. What about yours?

Remember, this traveling display is economical. You own the "billboards" . . . for just the cost of plates and printing you add a strong link to your promotional chain.

To learn how your shipping box can double as a sales promotion aid, check with the Gair plant nearest you. Learn, too, how Gair's assured supply source, engineering ability and delivery service help give you the best in corrugated or solid fibre shipping boxes.

Ask for a copy of the *Shipping Case Handbook*.

CAMBRIDGE, MASS. • CLEVELAND, OHIO • HOLYOKE, MASS. • MARTINSVILLE, VA. • NO. TONAWANDA, N. Y.  
PHILADELPHIA, PA. • PORTLAND, CONN. • RICHMOND, VA. • SYRACUSE, N. Y. • TETERBORO, N. J.



**GAIR**

SHIPPING CONTAINERS  
FOLDING CARTONS  
PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44th STREET • NEW YORK 17

For More Information Circle No. 297 on Inquiry Card—Page 17

APRIL, 1954

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# how to save by buying cleaning results instead of just cleaning materials

**for example:** One Company saved \$1,800 cleaning four heat exchangers in place

**for example:** A Food Processor cut cleaning-before-repainting-time from 2 days to 3 hours

Results—not merely cost per pound or gallon—determine your company's cleaning costs. You're bound to get the best possible results when you take advantage of Oakite's highly developed Technical Service. This is proved by the typical experience of others:

**\$1,800 saved on one job** of cleaning four heat exchangers. Tube bundles formerly pulled out for cleaning. Oakite methods and materials permitted thorough cleaning right in place, saving costly handling time.

**2-day-cleaning cut to 3 hours** when Oakite cleaning experience, steam-detergent gun and the right cleaning materials were applied to clean a food plant's equipment for repainting.

Remember—Oakite provides all the necessary elements needed for best results (1) *exactly the right cleaner* for the job from over 80 Oakite materials (2) efficient time-and effort-saving methods (3) the cleaning knowledge, experience, advice of the Oakite Technical Service Representative who'll do his utmost to give you the best possible job at the lowest possible cost. Call in your nearby Oakite Man. Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING  
**OAKITE**  
TRADE MARK REG. U. S. PAT. OFF.  
MATERIALS • METHODS • SERVICE

Technical Service Representatives Located in Principal Cities of United States and Canada

For More Information Circle No. 298 on Inquiry Card—Page 17

**Kenneth M. Halverson** is the new Purchasing Agent of the Ford Division's Atlanta, Ga., assembly plant. He was previously administrative assistant to the plant manager. Mr. Halverson joined Ford in St. Paul, Minn., in 1944. He was transferred to Atlanta in 1947.

**Oscar M. Stagg, Jr.**, is now Purchasing Agent for Birmingham Southern Railroad Co., Fairfield, Ala. He suc-



Oscar M. Stagg, Jr.

ceeds Leonidas V. Saxon, who is retiring after 43 years of service with the company.

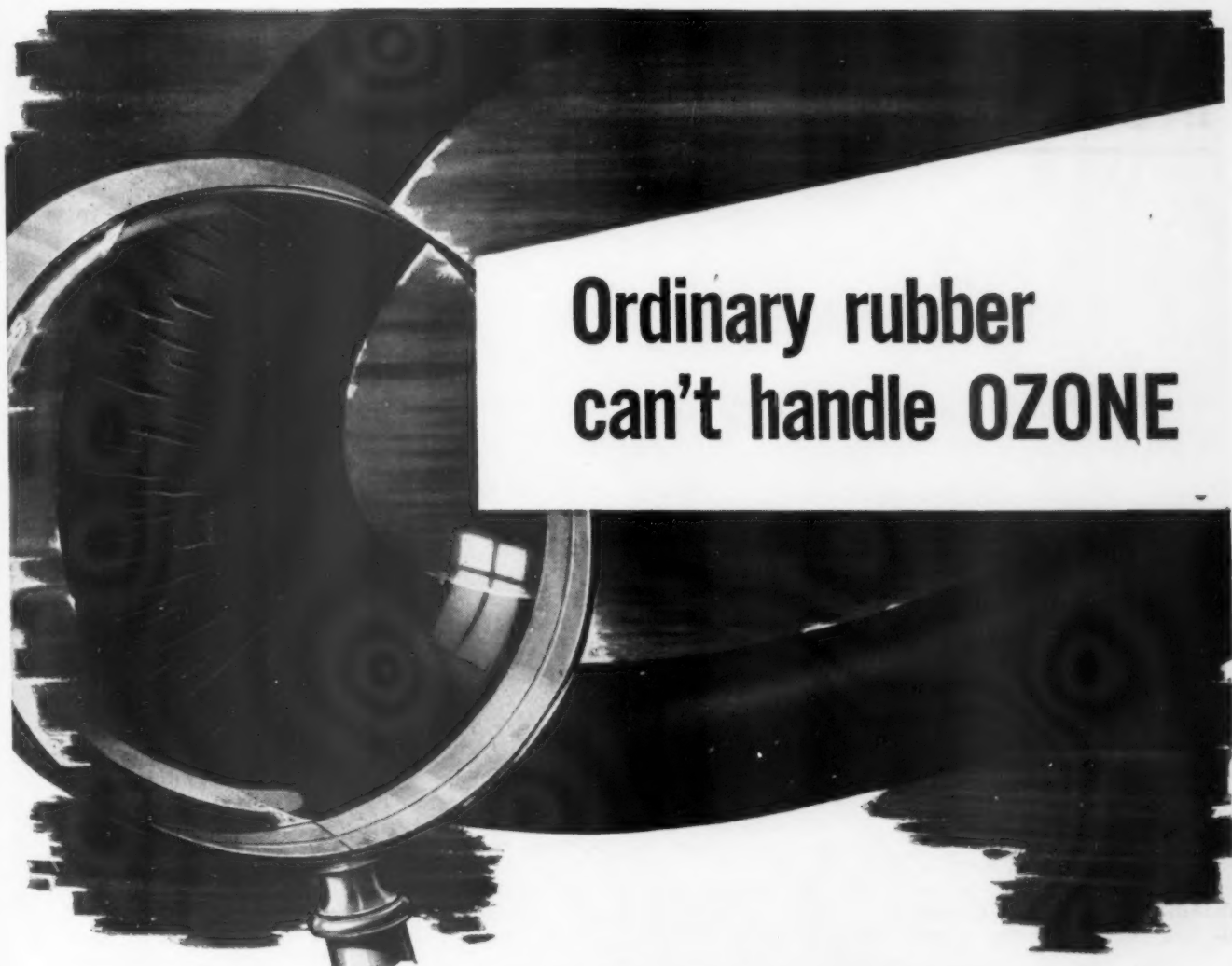
**Keith Wilson** is now Director of Purchases for Champion Spark Plug Co., Toledo, Ohio. Except for a three-year



Keith Wilson

tour of duty with the Navy Mr. Wilson has been with Champion since graduating from Ohio State University in 1942.

The promotion of **James M. Henry** to Director of Purchases, has been announced by the Standard Products Co., Cleveland, Ohio. Mr. Henry joined the company in 1944 as a member of the planning division in Detroit. He became head of this department, assistant to the sales manager and assistant to the manager of the Port Clinton (Ohio) division before becoming manager of the Gaylord division two years ago.

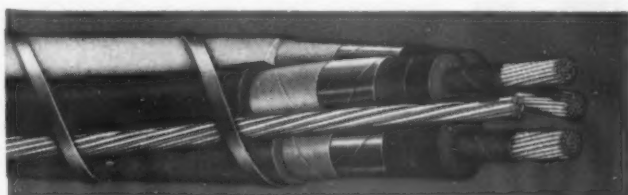


**Ordinary rubber  
can't handle OZONE**

## **You need U. S. GRIZZLY Uskorona-insulated Power Cables**

Here's an illustration showing how ozone can chew up a sturdy, rugged cable. This can never happen with United States Rubber Company's famous Grizzly® Power Cables insulated with Uskorona® compound which prevents electrical failure caused by ozone (Uskorona-1 oil base compound or Uskorona-2 butyl rubber compound). Uskorona meets (and in many ways exceeds) the applicable IPCEA specifications for ozone-resistant rubber insulation.

As the only wire manufacturer that grows its own natural



U. S. Grizzly Uskorona-insulated Power Cable, 5,000 Volts, type RR 3 conductor, shielded, Neoprene jacket.

rubber, produces its own synthetics and makes its own plastics (as well as the bulk of its own rubber-compounding chemicals and ingredients), United States Rubber Company is able to make certain that only the finest materials are used in the insulations for its wires and cables. These materials are expertly compounded according to methods devised after years of research and experimentation in "U.S." laboratories. Finally, U.S. Rubber's practical "know-how" contributes its important part to the uniform high quality of every "U.S." insulation. This "know-how" is the result of 68 years of successful manufacture of electrical wires and cables, and over a century in the making of fine rubber products.



Send for free catalog giving full information about U. S. Electrical Wires and Cables

# **UNITED STATES RUBBER COMPANY**

**ELECTRICAL WIRE & CABLE DEPARTMENT ROCKEFELLER CENTER, NEW YORK 20, N. Y.**



For More Information Circle No. 301 on Inquiry Card—Page 17

APRIL, 1954

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# INDUSTRIAL Developments



**Adamas Carbide Corporation** has moved from Harrison, N. J., to a new, million-dollar plant at **Kenilworth, N. J.** The new plant has scientifically controlled atmospheric conditions throughout and contains a large research laboratory.

All major projects have been completed in the expansion program of **Granite City Steel Co., Granite City, Ill.** The program, started in 1951, has

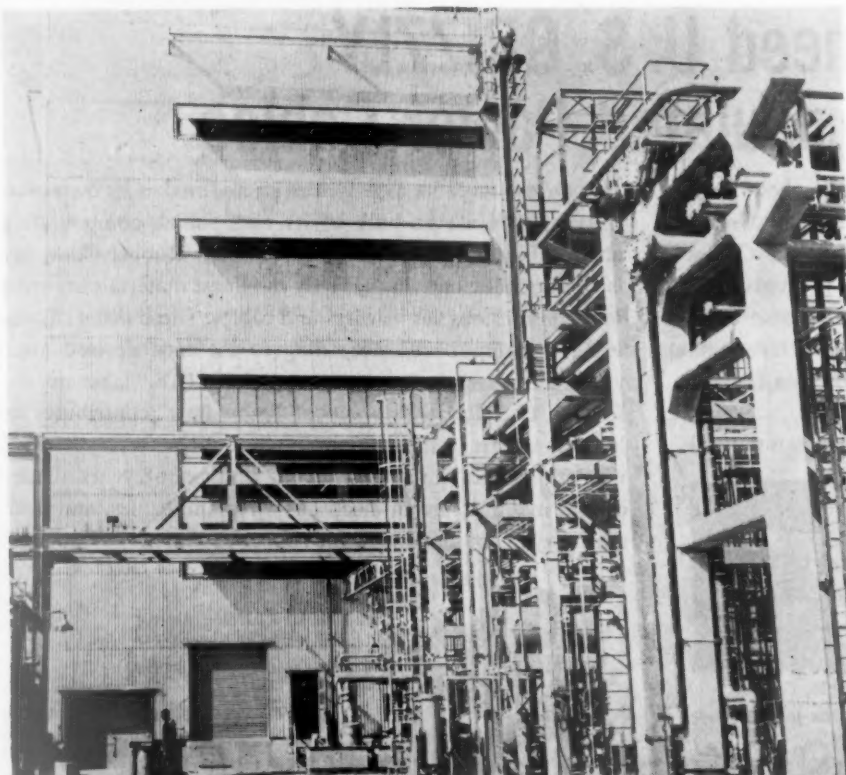
increased the mill's annual ingot production capacity from 700,000 to 1,200,000 ingot tons. Granite City Steel now has some of the most modern open hearth and rolling mill facilities in the industry. Construction included three new open hearth furnaces, a 46-inch blooming mill, three slab heating furnaces and extensive alterations to the firm's hot strip mill. The open hearth furnaces each have a capacity of 300 tons per heat, are oil fired and automatically controlled.

A new ethylene plant and a new platforming plant, each claimed to be the largest of its kind, will be built at the Port Arthur, Texas, refinery of **Gulf Oil Corp.** The ethylene unit will have a capacity of 3,000,000,000 cu.ft. of ethylene gas per year, an increase of about 10% in the nation's ethylene production. The platforming unit will be designed to produce an improved quality of high octane motor gasoline. Its capacity will be 29,000 barrels per stream day. The platforming process will use platinum as a catalyst to convert lower octane gasolines and naphthas into high test gasoline. Both units are expected to be completed during the first quarter of 1955.

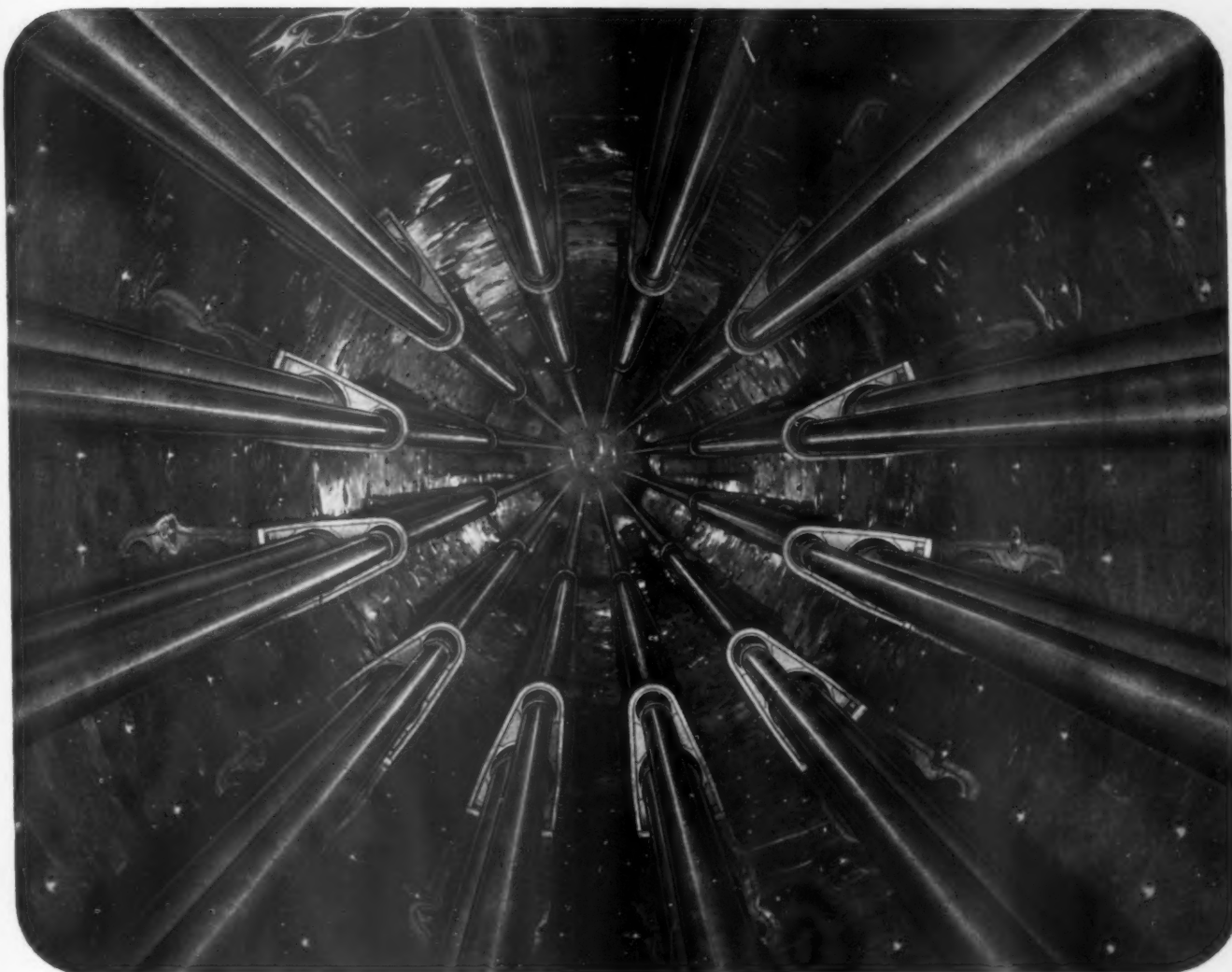
**Timken Roller Bearing De Mexico** has been formed to handle the sale of products manufactured by the **Timken Roller Bearing Co., Canton, Ohio.** Sales offices and warehouses of the new company are located in Mexico City.

A new 150,000 lb steel tube drawbench has been installed by **Pacific Tube Co., Los Angeles.** The new equipment will enable Pacific to draw steel tubing to a maximum length of 52 ft, with an o.d. as great as 6½ ins. The drawbench, itself, is a single chain, single draw, double mandrel rod, two speed drive type. Its operation is almost entirely automatic.

**Chase Brass & Copper Co., Inc.,** a subsidiary of **Kennecott Copper Corp.,** is moving its warehouse, in Los Angeles, to a new location. The new warehouse floor will be at railroad car height and will have loading docks for the handling of six trucks at one time. The entire building area will be served by an overhead crane system. Total space is approximately 50,000 sq.ft.



**WORLD'S LARGEST EPOXY RESIN PLANT.** Shell Chemical Corp., New York City, is tripling production of versatile, petroleum-base resins with its new Epon plant in Houston, Texas. The building and installations, shown, are protected with paints containing Epon resins.



## TRENTWELD STAINLESS TUBING gives longer operating life...



**FREE**—Write for your copy of the new TRENTWELD price calculator. Just a tug at the selector slide gives you complete price information and weight per foot of the tubing size and grade you need. Better send for your free copy now.

# TRENTWELD

## STAINLESS STEEL TUBING

TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN (Subsidiary of CRUCIBLE STEEL COMPANY OF AMERICA)

For More Information Circle No. 302 on Inquiry Card—Page 17

APRIL, 1954

TRENTWELD stainless steel tubing gives economical, trouble-free service over long periods of use. It's an ideal choice, for example, for applications such as the 60-foot rotary kiln dryer you are looking into in the photograph above... operating at high temperatures and where corrosive conditions are encountered.

In fact, you just can't buy better tubing than TRENTWELD for any application. That's because TRENTWELD stainless and high-alloy welded tubing is a product of tube mill specialists. Each tube has a uniformly sound weld indistinguishable from the parent metal and just as strong and corrosion-resistant.

Whether or not your job is as large and complex as a rotary dryer, you can specify TRENTWELD tubing with confidence. And when it comes to tubing sizes and finishes, Trent offers the widest range in the industry... from  $\frac{1}{8}$ " to 40" O.D. and up. Next time you have a job involving tubing, remember—you can make it better with TRENTWELD.



# AMAZING NEW COUPLER FOR RECIPROCATING AIR TOOLS

*Can't Be Hammered  
To Pieces!*



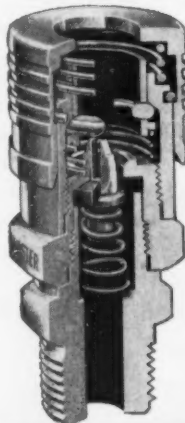
- No Pulling • No Twisting
  - No Turning • No Screwing
- JUST PLUG IT IN



**FOSTER** *Matic*  
QUICK DETACHABLE  
COUPLERS



- Can Be Used Directly With Reciprocating Air Tools Without The Use Of Lead Hoses
- Will Not Fall Apart Will Not Blow Apart
- Steel Body and Sleeve From Solid Bar Stock
- Greater Air Capacity—Small Diameter—Light Weight



*H*olds tighter without leakage, yet swivels freely, "Dogs" lock—STEEL against STEEL at 45°, and are positioned by floating steel carrier. Eliminates all usual housing wear. Write for NEW descriptive literature FM-11



"WE HAVE GOOD CONNECTIONS"

**FOSTER MFG. CO. Inc.**  
2850 GRAVOIS • ST. LOUIS 18, MO.

Kropp Engineered Products, a subsidiary of Kropp Forge Co., Chicago, is installing \$1½ million worth of new machinery and equipment which will enable the company to perform all types of machining of both ferrous and non-ferrous metals. New equipment being installed includes milling machines, lathes, grinders, shapers, die-sinking equipment, drill presses, tool grinding and sand blasting equipment, magnaflux and ultrasonic testing machines and precision jig bore equipment.

The Warner & Swasey Co., Cleveland, has purchased the business and assets of Industrial Scientific Co., New York City, and formed the Warner & Swasey Research Corporation. The new organization is expected to expand operations to research projects in the fields of machine tools and textile machinery.

The W. A. Kates Co., Deerfield, Ill., has purchased the corrosion resisting utility pump business of the Illium Corporation.

LeTourneau-Westinghouse Co., Peoria, Ill., wholly-owned subsidiary of Westinghouse Air Brake Co., is establishing an operation in Brazil to produce LeTourneau-Westinghouse parts and some earth-moving machines. It will be known as Tratores do Brasil S.A., and will be located at Campinas, about 60 miles from San Paulo.

Engineering innovations for product protection, high accuracy scales and one of the largest truck terminals in metal warehousing, are some of the features of the new Huntington, W. Va., distribution center of International Nickel Co., Inc., New York City. Recently completed at a cost of \$1,700,000, the unit has the latest equipment for straightening, cutting and inspecting metal products. The plant produces more than 400 separate products in 19,000 different sizes.

Atlas Powder Co., Wilmington, Del., has started construction on two esterification plants which produce emulsifiers. One plant is at Memphis, Tenn., and the other at Brantford, Ontario. The Memphis plant, larger of the two, will cost more than \$1,000,000 and is scheduled for completion by late 1954. The Brantford plant will cost nearly \$350,000 and will be in operation around the middle of the year.

The erection of a new plant on the outskirts of Benton Harbor, Mich., has been announced by Clark Equipment Co., Buchanan, Mich. Construction will start immediately with completion scheduled by the end of the year. The 145,000 sq. ft. plant will be used for the assembly of a new line of tractor shovels to be produced by Clark as well as the assembly of power shovels now being made in the present Benton Harbor plant.

For More Information Circle No. 303 on Inquiry Card—Page 17

# Which is the *CleCap*?



... the one you got the day you wanted it!

All right, we'll skip the arguments about which of these two cap screws is the best . . . though we can prove that one is better because of the Kaufman *double-extrusion* Process and many other factors.

The BIG DIFFERENCE, if you ask long-time Clecap buyers, is the Clecap organization that cheerfully "breaks its neck" to get you what you want exactly when you want it. An astonishing record over the years!

Why not enjoy the comfortable worryless feeling a lot of buyers get by putting all their cap screw needs up to Clecap?

## The Cleveland Cap Screw Co.

2922 EAST 79TH STREET • CLEVELAND 4, OHIO  
VULcan 3-3700 TWX CV42

WAREHOUSES: CHICAGO • PHILADELPHIA • NEW YORK  
PROVIDENCE • LOS ANGELES

Originators of the Kaufman **DOUBLE EXTRUSION** Process

For More Information Circle No. 306 on Inquiry Card—Page 17

### Cleveland *Top Quality* Fasteners

#### Ferrous and Non-Ferrous

Hex Head Cap Screws—Bright and High Carbon Heat Treated Steel, Brass, Silicon Bronze, Stainless Steel; ¼" to 2½" dia.

Socket Head Cap and Set Screws—Plain and Knurled: ¼" to 1½" dia. Also Flat and Button Head Styles

Flat Head Cap Screws: ¼" to 1" dia.

Fillister Head: ¼" to 1½" dia.

Set Screws—Square Head: ¼" to 1½" dia.

Milled Studs: ¼" to 1½" dia.

Flange Bolts: ¼" to 1½"

Structural Bolts

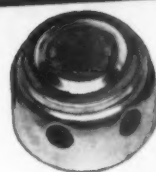
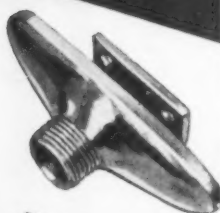
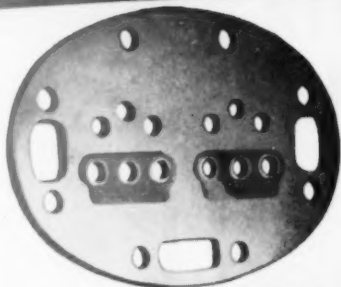
Tractor Bolts

Facilities to make larger diameters than listed.

Special Hot and Cold Headed Parts

Ask Your Jobber for *Clecap*!

# how DE-STA-CO makes specialties S.O.P.



**\* STANDARD  
OPERATING  
PROCEDURE**



Forty years of experience in the stamping business has taught us the value of giving our customers certain processing procedures which are ordinarily considered "extras". This policy of considering your needs first is largely responsible for our consistently rapid growth.



Close tolerance coining is one of the production methods that DeStaCo offers, not as a specialty, but as a Standard Operating Procedure. Our knuckle-action presses accommodate up to 400-ton capacity . . . frequently save you the additional expense of a grinding or machining operation.



Our precision parts department turns out critical stampings such as refrigerator intake and discharge valve reeds. These parts are made of heat-treated and ground imported DeStaCo valve steels. Our own Iso-Finish method provides a sealed-edge, strain-relieved surface for long life.



High-volume production of small, intricately-formed parts is done by Multi-Stamping. This is an entirely automatic method of processing complete parts in a single 4-slide machine. Progressive dies used in this operation are made in our own tool and die department.



Our production facilities include a number of high-speed, automatic presses to process your parts at the lowest possible unit cost. Our plant is best-suited to quantity production runs of light to medium-heavy fabrication up to  $\frac{3}{4}$ " material thickness. Our bed areas range from 10" x 12" to 48" x 72", pressures from 5 to 250 tons. We draw up to 4" deep.

Other DeStaCo specialties are Toggle Clamps for jigs and fixtures, Precision Washers, Arbor Spacers and Shims, Shim and Feeler Stock.

REPRESENTATIVES IN PRINCIPAL AREAS

Write us for our Stamping brochure



**DETROIT STAMPING COMPANY**

408 MIDLAND AVENUE • DETROIT 3, MICHIGAN  
SEE US AT THE TOOL SHOW, BOOTH 440, PRECISION HALL

Koppers Co., Inc., Pittsburgh, has announced the expansion of its Chemical Division through the production of polyethylene. Four plant sites are under consideration, including Port Arthur, Texas, where Koppers already has a plant.

The erection of a 40,000 sq. ft. manufacturing plant for the newly-organized New Jersey Shale Brick & Tile Corp., Hamilton Station, N. J., is now under way. The factory will be equipped to produce, in its first year, 15,000,000 units of shale face brick, structural brick, ceramic glazed tile, acid resistant brick, floor tile, quarry tile and ceramic structural specialties. Future plans provide for an annual production of 50,000,000 units. The building will be a single-story structure of rigid steel framework covered by corrugated aluminum.

The Okonite Co., Passaic, N. J., manufacturers of insulated wires and cables, has announced that its wholly-owned subsidiary, Okonite-Callender Cable Co., Inc., is being merged with the parent company. The trademarks "Okonite-Callender" and "Okocal" will be retained.

Production capacity at both the Portland, Ore., and Stockton, Calif., plants of McCormick & Baxter Creosoting Company has been increased with the installation of additional pressure treating equipment. The expansion program, which included new 146-foot retorts, has also provided new facilities for pressure treatment of forest products with pentachlorophenol and Boliden salts, government approved preservatives, as well as creosote and creosote-petroleum.

The Maine Dowel Corp., Farmington, Me., has completed the installation of a modern cinder block dry kiln. The new kiln has a capacity of 30M board feet and automatically controls uniform and accurate drying of raw lumber.

National Cylinder Gas Co., Chicago, announced that its new oxygen plant in Tampa, Fla., is now in operation. The company now has 55 oxygen and 37 acetylene plants located across the country and in Canada, Colombia and Venezuela. The company also announced that plans are underway for the construction of a \$3,500,000 plant for manufacture and distribution of liquid oxygen in Chicago. It will be built on an 8-acre tract and will be a one-story construction.

The opening of the new 300 foot conveyorized production line at Cummins Engine Co., Inc., Columbus, Ind., has signalled the completion of the building portion of the company's \$7,000,000 post-war expansion program. The assembly line is housed in a completely air-conditioned, dust-proof structure.

For More Information Circle No. 307  
← on Inquiry Card—Page 17

PURCHASING

# We can save you 1 hour's work each day!

Every day some PA is needed by his boss to make better steel purchases, save the company some money, help cut costs. "Sure, sure, Mr. McClure . . . I'm trying."



**R<sub>x</sub>** for **PA's**—Save yourself an hour's shopping around time, call Solar first because you can buy steel from us for any part you make for any product anytime at minimum cost!

● "We, too, carry bargain steels (with no trick names) for special jobs."



"for service dependable as the sun"

## SOLAR STEEL CORPORATION

General Offices: Union Commerce Bldg., Cleveland, O.  
SALES OFFICES: Bridgeport • Chicago • Cincinnati • Cleveland  
Detroit • Grand Rapids • Kalamazoo • Los Angeles • Milwaukee  
Montreal • Nashville • Philadelphia • River Rouge  
Rochester, N. Y. • Toledo • Union, N. J. • Washington, D. C.  
Worcester, Mass.

FLAT ROLLED AND BAR AND TUBE STOCKS AND PROCESSING SERVICES FROM 11 PLANTS

For More Information Circle No. 308 on Inquiry Card—Page 17

# Save 3 ways

## WITH ANTI-CORROSIVE STAINLESS STEEL FASTENINGS



**SAVE INITIAL COST!** Superior production capacity and know-how means *lower costs!* Anti-Corrosive is America's *oldest* and *largest* firm dealing exclusively in stainless fastenings — a good reason to check Anti-Corrosive *first* for stainless steel fastenings!



**SAVE TIME!** Anti-Corrosive's **IN STOCK** inventory of more than 9,000 varieties and sizes of stainless steel fastenings means *immediate delivery* of your requirements. Special orders are delivered faster, too, due to streamlined production schedules for these important items!



**SAVE OPERATING COSTS!** Anti-Corrosive's *consistent* top quality protects your production schedules, eliminates rejection headaches, means trouble-free operation, and longer life!

Write for **FREE** Catalog 54D, the *one complete reference handbook* to stainless steel fastenings! Availability of varieties, sizes . . . plus prices and discounts . . . *at a glance!*



**ANTI-CORROSIVE  
METAL PRODUCTS CO., INC.**  
Castleton-on-Hudson,  
New York

A wholly-owned subsidiary, Standco Canada, Ltd., has been created by **Standard Pressed Steel Co., Jenkintown, Pa.**, to supply industrial Ontario and Quebec Provinces with precision metal fasteners. Headquarters for Standco Canada is in a new building at 193 Bartley Drive, Toronto.

The world's two most powerful transformers, each capable of handling the electric power needed by a city the size of Baltimore; Md., will be built by the **Westinghouse Electric Corp., Pittsburgh**, for the Detroit Edison Co. The two units will be rated at 315,000 kva each, the equivalent of 420,000 hp. They will be installed at Detroit Edison's new River Rouge Power Plant. The first of the transformers is scheduled for shipment in 1955 and the second for 1956.

**Reynolds Metals Co., Louisville, Ky.**, has announced its new Robert P. Patterson aluminum reduction plant, near Arkadelphia, Ark., is now in operation. It has an annual rated capacity of 110 million pounds of virgin aluminum, bringing Reynold's production capacity to 829 million pounds. It cost an estimated \$34 million. In addition to its "pot rooms", where metallic aluminum is produced, it includes a general administrative office, laboratory, carbon electrode plant, auto storage facilities, steam plant, etc.

A 237,000 sq. ft. plant in **Long Beach, Calif.**, to house the Grayson Controls Division of the **Robertshaw-Fulton Controls Co., Greensburg, Pa.**, is now under construction. It will cost nearly \$2,500,000 and will be of modern steel and concrete design.

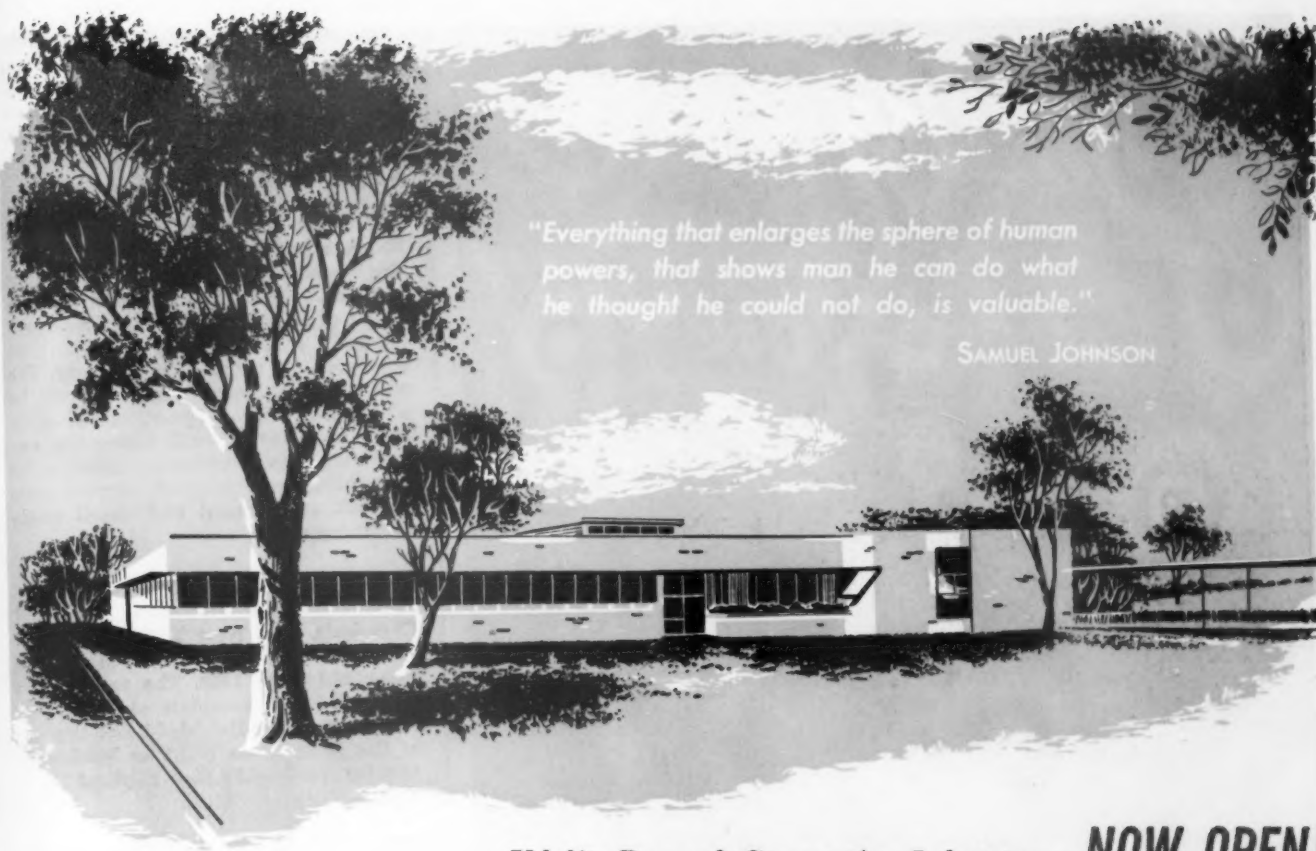
**The Multi-Amp Corp.** has moved from Harrison, N. J., to 10 Third St., Newark, N. J.

**The Nelco Tool Co., Manchester, Conn.**, has purchased the Modern Tool Co., Berlin, Conn. It will be known as the Modern Tools Division.

Elevator Accessories Division of the Richards-Wilcox Manufacturing Co., Aurora, Ill., has been purchased by **Montgomery Elevator Co., Moline, Ill.** All operations will be moved from Aurora to new facilities in Moline. The organization will be known as Elevator Accessories Corp., subsidiary of Montgomery Elevator Co.

**Eaton Manufacturing Co., Cleveland**, has purchased the Spring Perch Co., Lackawanna, N. Y. It will be operated as a subsidiary of Eaton.

The formation of a new company to manufacture industrial power sweepers has been announced. Known as **Line Manufacturing, Inc., Los Angeles**, the organization will produce six industrial sweeper models ranging from 2½ hp to 14.6 hp and 24, 36, or 48 inches in size.



"Everything that enlarges the sphere of human powers, that shows man he can do what he thought he could not do, is valuable."

SAMUEL JOHNSON

*Udylite Research Corporation Laboratory—***NOW OPEN!**

## *A brand new 'house' where progress lives*

**E**very time Industry turns the doorknob of a new research plant, it opens the door to Progress. The formation of The Udylite Research Corporation and the opening of the largest, most completely equipped research building in the industry are important steps forward in the progress of metal finishing.

Out of Udylite's laboratories during the past quarter century have come a score or more major contributions to the art of electroplating. This pioneering has helped the plating industry to grow through the development of

improved processes, more efficient equipment and supplies.

With its new research building, containing a complete pilot plant, six specialized laboratories and the complete metal finishing library, Udylite will expand its research at an accelerated pace, continuing as the source of new and better ways of metal finishing.

The industrial developments of the future are fast becoming problems of the present. The progress of the metal finishing industry in meeting these challenges is now more assured. For Progress moves through the people of research . . . and now Progress has a brand new "home."

**PIONEER OF A BETTER WAY IN PLATING**




For More Information Circle No. 312 on Inquiry Card—Page 17

APRIL, 1954



285

*Quality*  
BEGINS WITH THE  
*Housing*



**KUHN & JACOB**

ESTABLISHED 1919

We are proud to be selected by the Pyramid Instrument Corp. of Lynbrook, N. Y. as the molder of the upper and lower plastic shells for the Amprobe Energizer shown at the right, an accessory for the famous amprobe snap-around volt-ammeter.

In products for the electrical industry accuracy of parts is of prime importance. Such accuracy is a matter of course at Kuhn & Jacob, where closely fitting molded parts by the thousands are turned out daily. From design to finished piece K & J is ready to meet your molding needs.

## KUHN & JACOB MOLDING & TOOL CO.

1221 SOUTHARD ST., TRENTON, N. J.

CONTACT THE  
K & J  
REPRESENTATIVE  
NEAREST YOU

S. C. Ullman, 55 W. 42nd St., New York, N.Y.  
Telephone—Penn. 6-0346  
Wm. T. Wyler, Box 126, Stratford, Conn.  
Telephone—Bridgeport 7-4293  
Wm. A. Chalverus, Carson Road,  
Princeton, N. J.

For More Information Circle No. 313 on Inquiry Card—Page 17

**Metallurgical, Inc., Minneapolis, Minn.**, opened its new metal treatment plant on its 10th anniversary. With 67,000 sq. ft. of operating space, the plant provides the most modern methods of treatment for ferrous and non-ferrous metals.

**Mathews Conveyor Co., Ellwood City, Pa.**, has broken ground for an extensive expansion program. A new office and engineering building and an addition of approximately 25,000 sq. ft. to present manufacturing areas, are scheduled for completion this year. The office and engineering building will be a modern, fire-resistant, three-story brick structure. It will house the executive offices, purchasing, order, sales accounting and research departments as well as proposal and detail engineering groups.

The Watson-Park Co., Ballardvale, Mass., has merged with **Reichhold Chemicals, Inc., New York City**. Watson-Park has been an affiliate of Reichhold since 1952. The merger has resulted in the complete absorption of the company by Reichhold and the use of the Ballardvale plant as headquarters for Reichhold's New England Division.

The McLain Fire Brick Co., manufacturers of refractory fire brick, sleeves, nozzles, runners and hot tops for use in steel plants and metal refineries, has been purchased by **H. K. Porter Co., Inc., Pittsburgh**. The McLain Company, which has six plants in Pennsylvania and Ohio, will operate as the McLain Fire Brick Company, division of H. K. Porter Co., Inc.

### NEWS OF YOUR SUPPLIERS

**J. H. Williams & Co., Buffalo, N. Y.**, has announced several changes in its sales department. Robert I. Barnstead moves from New York to cover the State of Ohio with the exception of Cincinnati. Edward R. Burkardt joins the firm as a sales representative in the southern California area. Earl W. Brennan will now cover Cincinnati and the portion of Kentucky that includes the Louisville trading area in addition to his regular territory of southern Illinois and Indiana. And, Louis J. Sauter, Williams' sales representative in the metropolitan Chicago area, adds northern Indiana, Illinois and Scott County, Iowa, to his territory.

**Mesa Plastics Co., Los Angeles, Calif.**, has opened a new plant at 11751 Mississippi Ave., Los Angeles.

**Enterprise Mfg. Co., Philadelphia**, has appointed the Bert J. Clark Co., Kansas City, Mo., as its representative in Kansas, Iowa, Nebraska, Missouri and part of southern Illinois.

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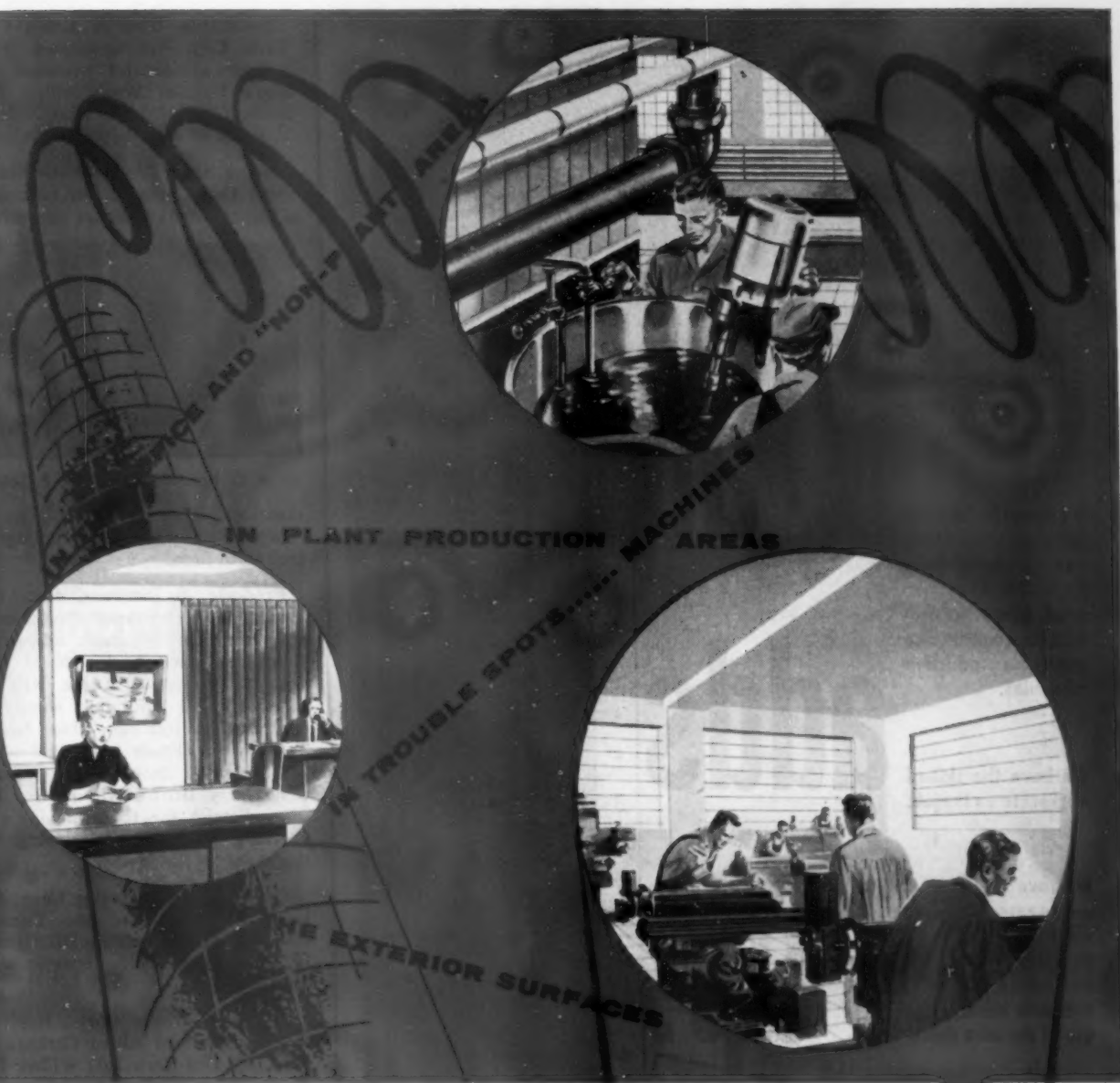
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EASING



## For Every Spot in Your Plant

From the bottom floor to the top of the stack . . . from the loading platform to the President's office . . . you'll get a better paint job at lower cost when you specify famous *Barreled Sunlight*\* maintenance paints.

Whatever your painting needs, there's a specialized, *heavy duty* Barreled Sunlight primer and finish to do the job better — and at lower "on the wall" cost both for material *and for the labor which today accounts for at least 80% of total "paintenance" outlay.*

For free descriptive catalog and information on Barreled Sunlight "Engineered Color" survey service, write today on your company letterhead. Barreled Sunlight Paint Co., 18-D Dudley St., Providence 1, R. I.



# Barreled Sunlight® *Paints*

In whitest white or clean, clear, wanted colors, there's a Barreled Sunlight Paint for every job

For More Information Circle No. 314 on Inquiry Card—Page 17

APRIL, 1954

287

+ We make the wire cloth we would use for your product... the well-known "NEWARK for ACCURACY" Cloth.

+ We offer more than 75 years experience in wire cloth manufacture and use.

+ We have the facilities for accurately fabricating parts from NEWARK Cloth in small lots or in production quantities to meet your production schedules.

+ We have the skilled workers to do the job.

+ We have experienced engineers ready to work with you in the design of the part to make the most effective and economical use of the wire cloth.

It  
all  
adds  
up!

— It all adds up to a service that can produce "quality" wire cloth inserts for you. It is the same service that has brought us many, many repeat orders and one that has been responsible for a steadily growing list of customers.

... and suggests why it will pay you to let us "fabricate" your wire cloth inserts.

**NEWARK**  
for ACCURACY

We can furnish wire cloth woven from all commercially used metals. Sizes range from 4 inches (space cloth) to 400 mesh.

**Newark**  
**Wire Cloth**  
**COMPANY**

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

For More Information Circle No. 315 on Inquiry Card—Page 17

Anaconda Wire & Cable Co., New York City, has appointed Albert H. Leader as district manager for the firm's Seattle, Wash. office. He succeeds Lloyd Wolfe, who retired after 32 years of service with the company.

Acme Steel Products Division, Acme Steel Co., Chicago, has named Albert G. Karstens as national account super-



A. G. Karstens



T. P. Schulz

visor and Theron P. Schulz as special representative for the company's central sales area.

Frederic B. Stevens, Inc., Detroit, Mich., has announced the creation of two new district sales offices. Vince Bruce has been made one of the district sales managers. He will supervise Stevens foundry supply sales activities in Indiana, Ohio, Kentucky, Tennessee, Illinois and part of Iowa. At the same time, it was announced that Harry Brown will head a similar sales district for the company's metal finishing division. His territory will be the same as Mr. Bruce's.

The S-P Manufacturing Corp., Cleveland, has appointed the Donald B. Hunting Co., 7446 Vine St., Cincinnati 16, Ohio, its exclusive representative in that Ohio area.

Adamas Carbide Corp., Kenilworth, N. J., has named Allied Carbide Products, 1801 Old York Rd., Willow Grove, Pa., its sales representative for eastern Pennsylvania, southern New Jersey and Delaware.

Robert R. Teller has been named manager of the Detroit, Mich., office of Davis & Thompson Company, Milwaukee, Wis.

Graton & Knight Co., Worcester, Mass., has appointed Tom Cook as sales representative for the Texas-Oklahoma area.

Norman A. Malone, Jim Quinn and Charles W. Kies have been made direct factory sales representatives for Ohio by Champion Screw Co., Chicago.

FOR FURTHER INFORMATION  
ON PRODUCTS IN THIS ISSUE  
PLEASE USE INQUIRY CARD  
ON PAGE 17

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ATION  
ISSUE  
CARD

HASING

# Bump that assures positive results

**When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.**

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bump-



ing is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!



MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeeze-Grip Carbon Dioxide Type Fire Extinguishers  
Dry Chemical Type Fire Extinguishers  
Built-In High Pressure and Low Pressure Carbon Dioxide  
Type Fire Extinguishing Systems  
Built-In Smoke and Heat Fire Detecting Systems

**C-O-TWO FIRE EQUIPMENT COMPANY**  
NEWARK 1 • NEW JERSEY

C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

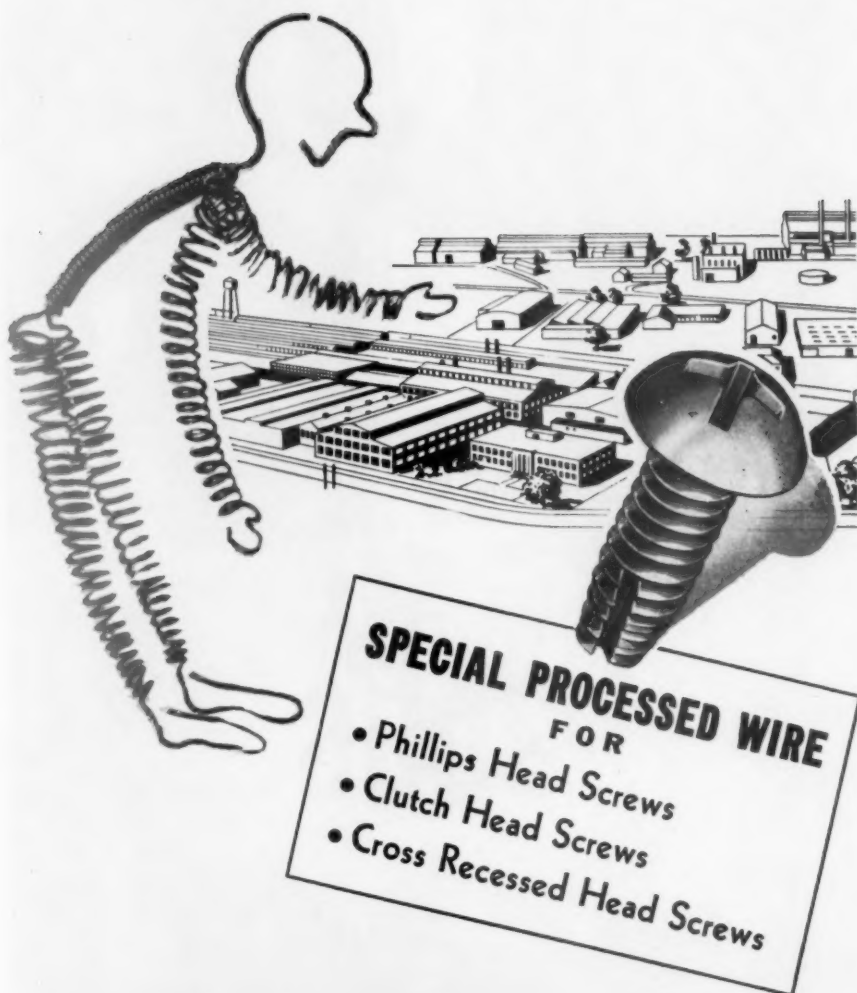
Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

For More Information Circle No. 318 on Inquiry Card—Page 17

APRIL, 1954

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## PRODUCTION CAPACITY DOUBLED

To keep pace with the rapid increase in the use of recessed head screws, Keystone is doubling its capacity in the manufacture of "Special Processed" wire.

The unusual qualities of Special Processed Wire are recognized by licensed manufacturers of recessed head screws. This wire has also proved itself superior on many other difficult cold heading jobs.

Our additional capacity will enable us to meet the ever-increasing demand for "Special Processed" wire by our present customers and at the same time welcome new customers.

**INDUSTRIAL WIRE SPECIALISTS**

**Keystone Steel & Wire Company**  
PEORIA 7, ILLINOIS



The appointment of three men to fill sales posts throughout eastern United States has been announced by **Hyster Co., Portland, Ore.** Jack Wright takes over as district manager in the northwestern area, James N. Rector moves to Atlanta, Ga., as district manager of the southeastern territory and Robert Hile becomes general manager of the Hyster Chicago location.

**Cutler-Hammer, Inc., Milwaukee, Wis.,** has named J. T. Riday as manager of the firm's South Bend, Ind., branch



J. T. Riday

sales office. He succeeds the late Terry Fisher.

**Artisan Metal Works Co., Cleveland, Ohio,** has appointed D. A. MacRitchie



D. A. MacRitchie

as sales manager.

**The Parker Appliance Co., Cleveland, Ohio,** has assigned R. N. Boucher as industrial sales engineer for the metropolitan New York area.

The Explosives Department, **Hercules Powder Co., Wilmington, Del.,** has named J. Joseph Kelleher as sales manager.

E. A. Bowditch is the eastern representative for latex foam rubber products of **General Tire & Rubber Co., Akron, Ohio.** He will cover metropolitan New York, New Jersey and New England.

TO MAKE A NEW PRODUCT POSSIBLE,

OR AN OLD PRODUCT BETTER

# American Felt



# Research

American makes felt that is soft as a kitten's ear, or hard as a board, and many kinds in between; felt of pure wool, or blends of wool with natural and synthetic fibres, or all synthetic; oil seals of felt layered with synthetic rubber, and so on. Because there are many hundreds of different types, it is important for manufacturers to choose correctly among them.

For example, recently a company had developed a new machine. The final important item was the felt to be used. Various selections were tried, and failed. Finally, the problem was put up to us, and promptly solved, making it possible to start producing the new device. If the company had come to us earlier, much time would have been saved.

It will pay you to make sure about felt. American's Engineering and Research Laboratory is at your service. Won't you let us collaborate with you?

## American Felt Company



GENERAL OFFICES:

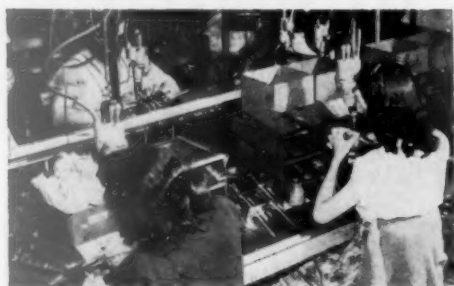
74 GLENVILLE ROAD, GLENVILLE, CONN.

SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, San Diego, Montreal. — PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

ENGINEERING  
AND  
RESEARCH  
LABORATORIES

**"400% Faster!"**  
**"Output Up 110%!"**  
**"Costs Cut 64%!"**

6 typical examples of how Millers Falls "Adjustomatic"® Clutch Electric Screw Drivers are saving time and money on thousands of assembly lines

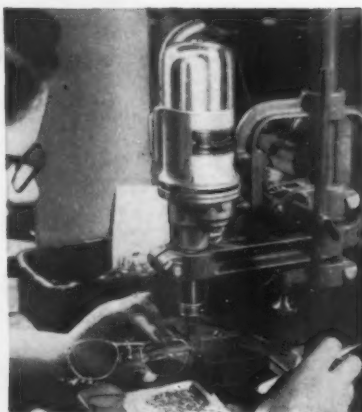


**TV TUNERS.** High power combined with hair-fine torque control — those are the qualities that won Millers Falls the nod over competing drivers on this exacting application.

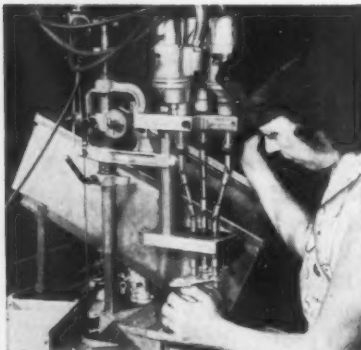


**TRAVERSE TRACKS.** Drive screws too tight — and tracks crush. Not tight enough — and stops loosen. Millers Falls' record on this job: Rejects, nil — speed, up 400%.

**MINIATURE MOTORS.** Problem: To drive tiny self-tapping screws without stripping or splitting a thin plastic housing. Solution: Millers Falls No. 52's. Result: Production up 110%.



**EYE GLASS FRAMES.** Driving tiny optical screws — traditionally an "impossible" job for a power driver. Yet Millers Falls drivers are doing it — and cutting labor costs 64%.



**WINDSHIELD WIPERS.** Ingenious, multiple-driver installations like this are one secret of the success of a leading manufacturer in this highly competitive field.



**HEATING CONTROLS.** Speed, accuracy, economy — on all three counts, this manufacturer chose Millers Falls after extensive tests with other electric and pneumatic drivers.

## There's a Millers Falls Driver that's Right for Practically Every Driving Problem

Write for full information or let us arrange a demonstration on Millers Falls drivers and many other high-performance electric tools for production and maintenance.

**MILLERS FALLS COMPANY**  
 Greenfield, Mass.

For More Information Circle No. 321 on Inquiry Card—Page 17



*The Mark of Superiority*

E. N. Luckey is now director of industrial sales for the Welsh Manufacturing Co., Providence, R. I.

Walter E. Rayher has been transferred from the Philadelphia office to the New York district office of the F. J. Stokes Machine Co., Philadelphia, as a senior sales engineer.

Columbia Steel & Shafting Co., Pittsburgh, has appointed Jules K. Egerman as district manager of sales for Columbia-Summerill in the Dayton-Cincinnati territory. He will headquarter in Dayton.

Robert Fulton has joined the Easton Metal Powder Co., Easton, Pa., to assist



Robert Fulton

in the sale and promotion of the firm's RZ iron powder.

Torrington Manufacturing Co., Torrington, Conn., has appointed William S. Doremus as the spring machine division's Ohio sales and service engineering representative. He will headquarter in Cleveland.

Hinde & Dauch Paper Co., Sandusky, Ohio, has named Willard S. Schweinfurth as Buffalo district sales manager. He will be responsible for the sale of products made at the H&D Buffalo plant.

Link-Belt Co., Chicago, has announced two district manager appointments. John D. Riley becomes district manager of the Cleveland, Ohio, office and Harry G. Andersen takes over as district manager at Newark, N. J.

H. K. Porter Co., Inc., Tonawanda, N. Y., has named C. A. Suchan, Jr., as New York district manager of the company's Buffalo steel division. Mr. Suchan will handle the sale of all Buffalo steel products throughout the Empire State.

Two new wholesale warehouse distributors have been appointed by the Ahlberg Bearing Co., Chicago, to handle the company's products in its California area. F. Somers Peterson Co., San Francisco will handle northern California and Nevada. The Latham Sales Co., Los Angeles, will cover southern California.

For More Information Circle No. 322 on Inquiry Card—Page 17 →

PURCHASING

# Announcing the **POWRWORKER "26"**

**Feature by feature,  
it's engineered to meet  
your own handling requirements**



Detailed job-studies in customer plants, warehouses and terminals dictated the features of the POWRWORKER "26".

No truck on the market today can match the POWRWORKER'S combination of *user-benefits*:

- **Maximum Maneuverability**—Only 26" longer than the load, the shortest standard truck on the market.
- **Light Weight**—Completely fabricated construction combines maximum strength with least weight.
- **Stability**—Close-to-the-floor, low center of gravity.
- **Great Efficiency**—Double reduction of spur gears gives maximum ton-miles at least power cost.
- **Balanced Load Distribution**—Double lift cylinders for smooth lifting and lowering.
- **Safety**—Deadman switch cuts power when brake is applied, handle automatically returns to brake-position.
- **Easy to Service**—All operating units accessible without lifting or dismantling. Drive wheel tire is quickly demountable.

We invite you to compare the 1954 POWRWORKER with any truck on the market! For details, call your local Clark dealer, listed in the Yellow Pages. Or send the coupon for literature.

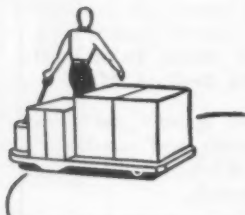
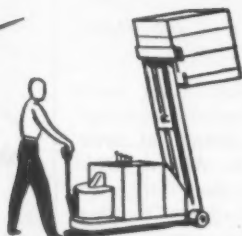
**Ask your Clark dealer about Clark's low-cost Pay-As-You-Go leasing plan.**



Pallet: 4000,  
6000 lbs. cap.



Stacker: 1500,  
2000, 2500,  
3000 lbs. cap.



**CLARK  
EQUIPMENT**

POWRWORKER SECTION  
Industrial Truck Division  
**CLARK EQUIPMENT COMPANY**  
Battle Creek 23 Michigan

☐ Please send POWRWORKER literature. ☐ Have representative call.

Name

Firm Name

Street

City  Zone  State

# GRAVELY



## ONE 5-HP GRAVELY POWERS 3 MOWING TOOLS

YOU CUT MOWING COSTS because ONE Gravelly Tractor powers all the tools shown — and more — 21 in all!

NO MORE buying an engine for each tool! Instead, ONE 5-HP Gravelly with tools changed quickly (only four bolts) handles the job — for the moment, or the season!

SAVE MANPOWER too, since ONE man, with ONE Gravelly, can do the upkeep jobs of a crew of eight in the same time! Mechanize the upkeep jobs — get more done better, in less time.

## 3 SNOW REMOVAL TOOLS

afford YEAR-ROUND USE, in every season — an example of Gravelly's versatility.

**MORE for your MONEY!**

5-HP — more than twice the power of the usual power mower . . . all-gear drive, two speeds forward and REVERSE . . . 21 tools available!

## WRITE . . . GET THE FACTS!

Send for 24-page Booklet, "Power vs Drudgery", that shows you how and why you get more for your money when you get Gravelly.

**PROOF BY JOB-TEST! FREE DEMONSTRATION**  
WE OFFER PROOF by on-the-job demonstration. Just write for literature or FREE Demonstration today!



**GRAVELY TRACTORS, INC.**  
BOX 53 DUNBAR, W. VA.

For More Information Circle No. 325  
on Inquiry Card—Page 17

The Electric Motor Division, North Plainfield, N. J., a division of The Hoover Co., North Canton, Ohio, has named James M. Adair as sales manager. Mr. Adair will supervise sales for the entire line of fractional and integral horsepower motors.

The New York district sales manager for Pennsylvania Industrial Chemical Corp., Clairton, Pa., is L. R. O'Rourke.

W. Gerard McKee will represent the Steel Division of Henry Disston & Sons, Inc., Philadelphia, in the Schenectady, Syracuse and Rochester areas of New York State.

R. & J. Dick Co., Passaic, N. J., has opened a new office and warehouse at 5276 Atlantic Blvd., Maywood (Los Angeles), Calif.

Alvey Conveyor Manufacturing Co., St. Louis, Mo., has appointed Alfred J.



Alfred J. Barchi

Barchi as sales engineer at the company's Philadelphia office.

Joseph A. Brainard has been named sales representative in northeastern Ohio and western Pennsylvania for the Peerless Electric Co., Fan and Blower Division, Warren, Ohio.

Albert M. Fiala has been made manager of special industrial merchandise, B. F. Goodrich industrial products sales department, Akron, Ohio. His duties include responsibility for the sale of rubber clothing, matting, electrical tape and silage caps.

H. G. Trotter has been made assistant to the executive vice president and general manager of Morse Twist Drill & Machine Co., New Bedford, Mass.

James S. Milliken is now the sales engineer in the south and southwest for Engineering Works division of Dravo Corp., Pittsburgh.

Robertshaw-Fulton Controls Co., Greensburg, Pa., has announced the appointment of Joseph C. McCarthy as Canadian sales representative for the company's Robertshaw Thermostat, American Thermostat and Grayson divisions.

# HOT DIP GALVANIZING

... EXCELLENT FACILITIES for PICKLING & OILING

Our Record: Over 50 years of progressive galvanizing service to manufacturers and fabricators of iron and steel products . . . any size or shape, any size order from the smallest to the largest. Excellent facilities for pickling and oiling.

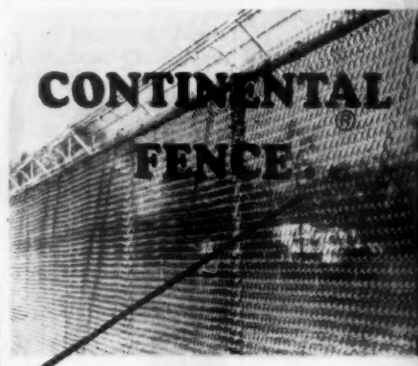
**"TO ECONOMIZE, GALVANIZE AT ENTERPRISE"**

**ENTERPRISE GALVANIZING CO.**

2519 E. CUMBERLAND STREET  
PHILADELPHIA 25, PENNSYLVANIA

For More Information Circle No. 326  
on Inquiry Card—Page 17

## CONTINENTAL FENCE



## Low Cost Security

Today, more than ever it's important to protect persons against injury and property against damage. Get permanent low cost security and control with the better built Continental Chain Link Fence.



Continental Steel Corp.  
Kokomo, Indiana

Please send FREE copy of "Planned Protection"—complete manual on property protection.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

**CONTINENTAL**  
STEEL CORPORATION • KOKOMO, INDIANA

For More Information Circle No. 327  
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**THE QUALITY  
OF THE PRODUCTS  
PASSING THROUGH  
YOUR SHIPPING  
DEPARTMENT—  
and keeping production  
rolling within your plant . . .**

The quality of the products that leave your shipping platform is dependent on more than close quality control within your own factory. It is inseparably linked to the quality of the components which enter your own receiving department . . . just a few steps away. Any original equipment manufacturer whose aim is to build quality into his product knows that suppliers of every component must have a similar high-level reputation to uphold. SEALMASTER'S leadership in the development of new and higher standards of bearing performance warrants that kind of reputation. Remember, if you would sell the best . . . be sure to buy only the best . . . buy SEALMASTER!

**IS GREATLY DEPENDENT  
ON WHAT COMES IN HERE!**

FACTORY REPRESENTATIVES AND  
DEALERS LOCATED IN ALL  
PRINCIPAL CITIES.

PILLOW  
BLOCK

CARTRIDGE  
UNIT

FLANGE  
UNIT

TAKE-UP  
UNIT

**SEALMASTER**



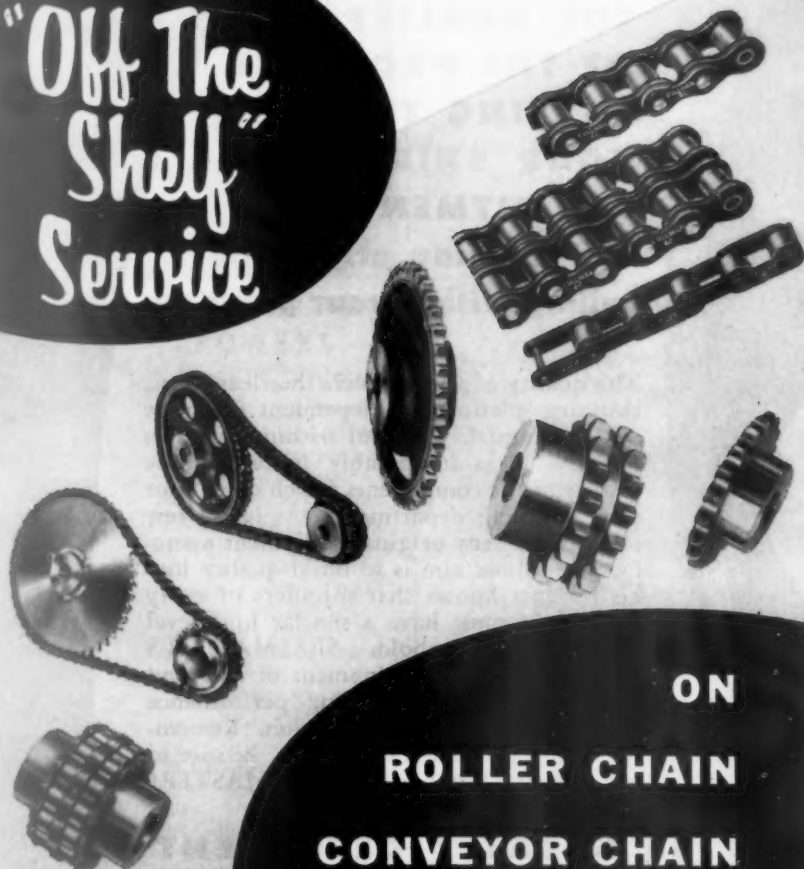
**SEALMASTER BEARINGS**

A Division of STEPHENS-ADAMSON MFG. CO.  
51 Ridgeway Ave., Aurora, Ill.



# SPECIFY CULLMAN

FOR  
"Off The  
Shelf"  
Service



ON  
ROLLER CHAIN  
CONVEYOR CHAIN  
SPROCKETS  
FLEXIBLE  
COUPLINGS



See our insert in  
Sweet's Catalog for  
Product Designers,  
or for complete data  
write for catalog No.  
51, shown above.

In fact, anything else you may need  
in chain drive equipment is available  
on short notice from Cullman's complete  
stocks. For immediate results on  
your chain drive requirements write  
today or see your Cullman distributor.



**cullman**  
POWER TRANSMISSION  
ROLLER CHAINS AND SPROCKETS

CULLMAN WHEEL COMPANY • 1342P ALTGELD ST. • CHICAGO 14, ILL.

For More Information Circle No. 329 on Inquiry Card—Page 17

Master Rule Manufacturing Co., Middletown, N. Y., has divided its eastern and western sales organizations and appointed two new divisional sales managers. R. M. Holder becomes eastern division sales manager in charge of all territory east of the Mississippi, excluding Louisiana. John Kenkel is the western division sales manager.

Hugh D. Mason has joined the southeastern sales staff of **Diamond Alkali Co., Cleveland, Ohio.** He will represent the company in Alabama and will headquarter in Birmingham.

**Soiltest, Inc., Chicago,** has appointed M. D. Morris as eastern representative with headquarters in New York City.

**U. S. Expansion Bolt Co., York, Pa.,** has appointed Ben C. Cleary as a salesman for the Virginia, West Virginia, North Carolina, South Carolina and



Ben C. Cleary

Washington, D. C., territory. He will headquarter at the company's main office in York.

**Miller Motor Company, Melrose Park, Ill.,** has changed its name to Miller Fluid Power Co. The change in name does not involve any change in ownership, products, management, personnel or policy. The company's address remains the same.

Walter F. Hess has been named to handle the line of chemical resistant cements, chemical resistant interliners and chemical resistant coatings manufactured by **Pennsylvania Salt Mfg. Co., Philadelphia.** He will headquarter in Detroit, Mich., and will cover eastern Michigan, western Ohio and Kentucky.

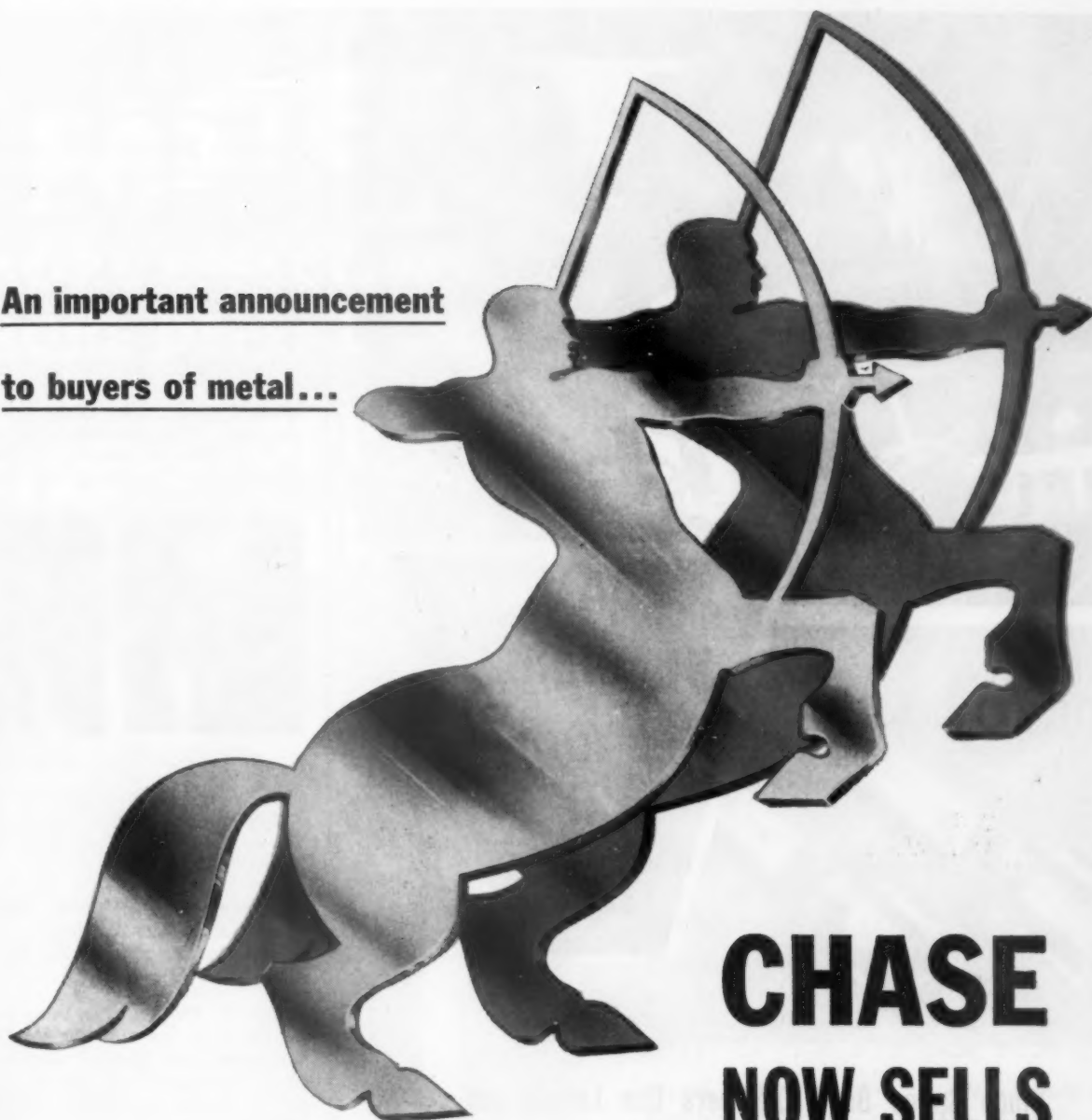
**Taft-Peirce Manufacturing Co., Woonsocket, R. I.,** has named the Kelsir Co., 2700 W. Concordia St., Milwaukee, Wis., as its manufacturer's agent for Wisconsin.

Harry W. Ellis has been named mid-western regional manager for **Electro Dynamic Motor Generator Division of General Dynamics Corp., Bayonne, N. J.**

**Micromax Co., Brooklyn, N. Y.,** manufacturers of electronic computers and servo-mechanisms, has changed its name to Computer Instruments Co.

**An important announcement**

**to buyers of metal...**



**CHASE  
NOW SELLS**

# STAINLESS STEEL, TOO

**Sheets, Plates, Bars, Wire, Pipe and Tubing now available  
through Chase warehouses and sales offices**

Now you can get Stainless Steel from Chase! Along with our regular brass and copper products, Chase can now supply Stainless Steel.

This line has been added as an extra service to metal buyers. Now you can get Stainless Steel, brass and copper from the same source. The same cutting facilities provided on

regular Chase products are now available on Stainless Steel orders, too. Anything not in stock locally can be shipped promptly from another Chase warehouse or from the mill.

**For service...for quality...** in Stainless Steel, too, call your nearest Chase warehouse or sales office.

**Chase**   
**BRASS & COPPER CO.**

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF  
KENNECOTT COPPER CORPORATION

*The Nation's Headquarters for Brass & Copper*

CHASE BRASS & COPPER CO., WATERBURY 20, CONN., Warehouses and Sales Offices at: — Albany† Atlanta Baltimore Boston Chicago Cincinnati Cleveland Dallas Denver† Detroit Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York Philadelphia Pittsburgh Providence Rochester† St. Louis San Francisco Seattle† Waterbury (sales office only)

For More Information Circle No. 330 on Inquiry Card—Page 17



**A  
Specialist  
is Your  
Best  
Bet**

## Vinco Spline Gage Engineers Can Locate and Correct Your Spline Gaging Troubles as Expertly as a Navigator Can Determine a Ship's Position

The needless loss of time and money, caused by splined parts not being interchangeable or failing in operation, is amazing. If this is happening to you, don't hesitate, call in a Vinco spline gage specialist. You will discover, as have so many other successful manufacturers, that the recommended corrective measures will clear up gaging confusion and reduce production, assembly and service problems. Such programs improve quality and reduce costs! In practically every case they have more than paid for themselves—proof that a specialist IS your best bet.

Vinco Corp., 9119 Schaefer Hwy., Detroit 28, Mich.

We'll see you in booth 121 at the A.S.T.E. Exposition

# VINCO

MILLIONTHS OF AN  
INCH FOR SALE

Gear Pumps • Master Gears • Commercial Gears  
B-1 Formed Wheel Dressers • Spline Gages  
Optical Master Inspection Dividing Heads  
Camshaft Comparators • Involute Checkers  
Precisiondex • Gear Rolling Inspection Fixtures

TRADEMARK OF DEPENDABILITY

For More Information Circle No. 331 on Inquiry Card—Page 17

The establishment of a new factory branch in Albany, N. Y., and the appointment of A. D. McCombs as Albany branch manager, has been announced by Trailmobile Inc., Cincinnati, Ohio.

Thomas Zawadzki has been named as sales representative to the wire and cable industry for the Chemical Sales Division, Firestone Plastics Co., Pottstown, Pa.

Canadian Vickers Ltd., Montreal, are now appointed manufacturers and distributors in Canada for the patented Sealed-Pin Chain Tubular Conveyors of Hapman Conveyors, Inc., Kalamazoo.

The Timken Roller Bearing Co., Canton, Ohio, has announced two appointments. Otmar C. Miller becomes sales engineer for the Steel and Tube Di-



O. C. Miller



R. W. Preston

vision with headquarters in Chicago. Ralph W. Preston is now sales engineer with headquarters in Houston, Texas.

Fenwal Inc., Ashland, Mass., has opened a Chicago district branch office at 549 W. Washington St., Room 704, Chicago 6.

Roy E. Heffner has been named a district sales manager for DeWalt, Inc., Lancaster, Pa. His territory will include the states of Maine, New Hampshire, Vermont, Rhode Island and Massachusetts.

Elmer F. King has been made a metal finishing sales representative in the New England area for Frederic B. Stevens, Inc., Detroit.

1 1 1

## One Coat Sealer Readies Porous Surface for Finish in 20 Mins.

One coat of a finish, known as Shell-O-Gloss 20 Minute Clear Sealer, seals the pores of wood, wallboards and porous cellular surfaces, according to the manufacturers, Rex Industrial Paint Works, Div., Rex Home Supply Co., Ossining, N.Y. It can be applied by brush, spray or dip coat and dries, as the name implies, within twenty minutes filling the surface of porous and grainy substances and making it possible to finish with paint or varnish within one hour. The sealer is practically as fast as lacquer but is much less of a fire hazard since it is based upon alcohol solvent.

**FASTER**  
**MORE EFFECTIVE...**  
**MORE DEPENDABLE**  
**FIRE-STOPPING**  
**POWER**

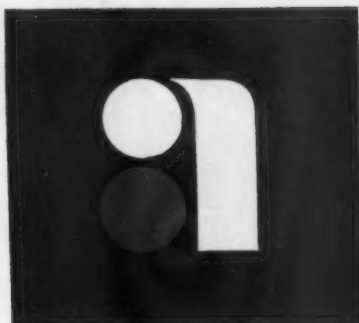


MODEL 20-B



**ANSUL**  
*Chemical Company*

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN



## **ANSUL**

### **FIRE EXTINGUISHING EQUIPMENT**

**FASTER . . .** A short, quick downward motion of the puncture lever pressurizes the extinguisher and it is ready for instant use.

**MORE EFFECTIVE . . .** Even the inexperienced operator gets near-expert results because of the ease of operation and handling. In addition ANSUL "PLUS-FIFTY" Dry Chemical has greater fire-killing power.

**MORE DEPENDABLE . . .** Exclusive ANSUL-ENGINEERED design features include water-tight and corrosion-resistant construction, easy, on-the-spot recharge without special tools and other exclusive Ansul developments which insure greater dependability.

**FIRE-STOPPING POWER . . .** ANSUL FIRE EXTINGUISHERS have the highest ratings for fire-stopping power ever awarded any type of class B and C fire extinguishing equipment.

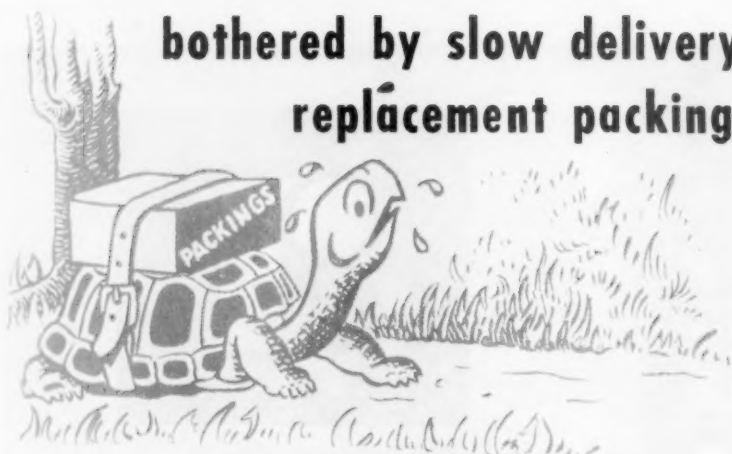


Send for File No. B-214. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

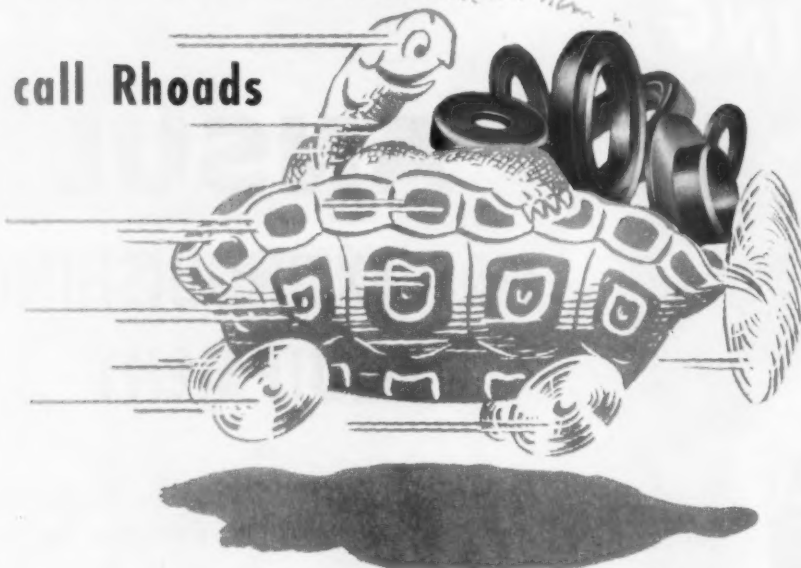
OFFICES AND DISTRIBUTORS IN PRINCIPAL  
CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

MANUFACTURERS OF  
DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION  
PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES

## bothered by slow delivery on replacement packings



call Rhoads



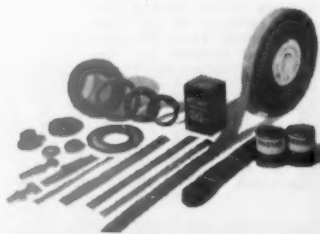
If your production is hampered and you're tearing your hair out because of slow delivery on replacement packings for hydraulic and pneumatic applications, pick up the phone and let us know the type, service, pressure, temperature, dimensions and quantity you want. We will make every effort to give you reasonably prompt delivery to get you back into production . . . along with well-known Rhoads quality.

Or perhaps you just want a quotation for use in the near future. Call us. There's no obligation. Direct factory representatives are ready to serve you, or call one of the following branch offices:

Philadelphia, Call LOmbard 3-7441

New York, Call BEekman 3-4466

Chicago, Call CEntral 6-6130



# RHOADS

INDUSTRIAL LEATHERS

PHILADELPHIA • NEW YORK • CHICAGO • ATLANTA

For More Information Circle No. 333 on Inquiry Card—Page 17

## Disposable Paper Work Caps Are Cheaper, And More Effective

A disposable paper work cap developed by Du Pont's safety engineers is now offered nationally by an eastern industrial supply concern. The caps, made of heavy Kraft paper treated with neoprene synthetic rubber, were adopted by Du Pont after exhaustive service trials under severe plant conditions.



The cap sells for about a third less than the cloth caps customarily worn. The cap is water repellent, and comes pre-treated with a flame retardant. It does not collect dust as readily as a cloth cap. While it is lighter in weight, the paper cap is surprisingly strong and holds its shape well.

In appearance, the paper caps follow conventional work cap lines and are sewn together in much the same manner as cloth caps. There is a leatherette sweat band around the inside, and the cap has a reinforced visor with cloth piping around the edge. The paper is crepe-textured, giving greater tear resistance.

At the Du Pont plant where they were first introduced, savings through use of the paper caps are expected to run upwards of \$2,000 annually. Because of the possibility of dripping acids and other chemicals, about 3,000 people at this plant are required to wear some sort of cap or hat for head protection. The majority wear caps furnished by the company.

1 1 1

## University of Iowa Announces 15th Management Course

The College of Engineering, State University of Iowa, announces the fifteenth Management Course to be held June 14 through June 26, 1954 in Iowa City.

It is an intensive course for factory managers, foremen, industrial (Please turn to page 308)

For More Information Circle No. 334  
on Inquiry Card—Page 17 →

PURCHASING

**When you buy welding elbows . . .**



**Why take less  
when you can get more?**

**. . . (and at the same price)**

#### **ADVANTAGES OF MIDWEST "LONG TANGENT" ELBOWS**

- ★ They save pipe.
- ★ They often eliminate short nipples and their extra welds.
- ★ They save time and money in lining up and clamping pipe and fitting.
- ★ They make it easier to apply slip-on flanges.
- ★ They remove the circumferential weld from point of maximum stress and can be sleeved.
- ★ **THEY COST NO MORE THAN OTHER ELBOWS.**

As shown in the illustration above, Midwest "Long Tangent" welding Elbows have straight ends equal to  $\frac{1}{4}$  of the nominal fitting diameter (a 12" elbow has tangents 3" long). For the reasons listed at the left, substantial savings are made on many piping systems by using Midwest "Long Tangent" Elbows. For more information about them, write for Catalog 54.

#### **MIDWEST PIPING COMPANY, INC.**

Main Office: 1450 South Second Street, St. Louis 4, Mo.

Plants: St. Louis, Passaic, Los Angeles and Boston

Sales Offices:

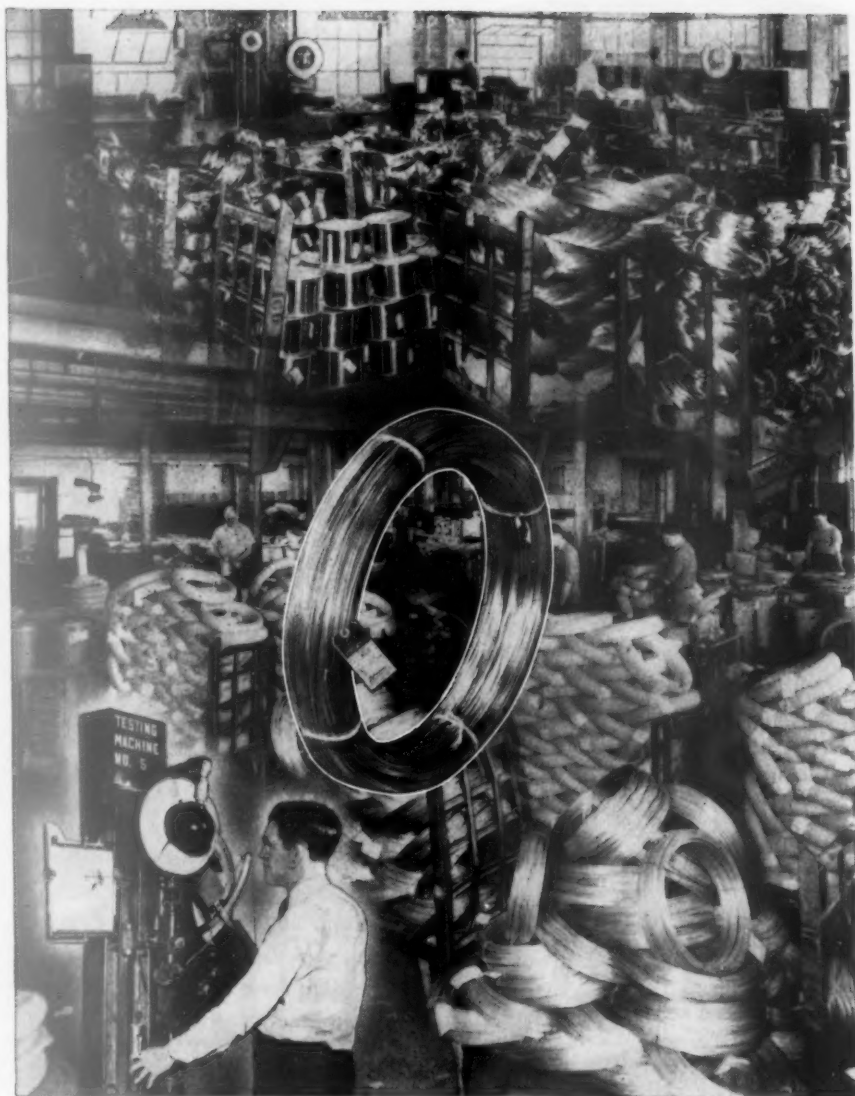
New York 7—50 Church St. • Chicago 3—79 West Monroe St.  
Los Angeles 33—520 Anderson St. • Houston 2—1213 Capital Ave.  
Tulsa 3—224 Wright Bldg. • Boston 27—426 First St.

STOCKING DISTRIBUTORS IN PRINCIPAL CITIES

6722

**MIDWEST**

**WELDING FITTINGS IMPROVE PIPING DESIGN AND REDUCE COSTS**



*If you are willing to work only on your own ideas,  
you limit yourself to the capacity of one man.*

Here at Johnson we have long been proud of our team. Without teamwork we could not produce the customer-satisfying volume of specialty wires. Our team is spread throughout the plant and in the laboratory, all over the plant where expert inspectors follow through each order to the shipping department where wire is wrapped with care and securely packed for shipment. Here, individual effort is compounded in the team.

## JOHNSON STEEL AND WIRE COMPANY, INC.

WORCESTER 1, MASS.

New York   Philadelphia   Pittsburgh   Cleveland   Detroit   Akron  
Chicago   Atlanta   Houston   Tulsa   Los Angeles

A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

For More Information Circle No. 337 on Inquiry Card—Page 17

(Continued from page 304)

engineers, methods and time-study analysts, cost accountants and office executives.

The areas of Production Planning, Job Evaluation, Motion and Time Study, Wage Incentives, Plant Layout, Materials Handling, Quality Control, Supervisory Training, Labor Relations and Legislation, Organization and Policy, and Public Speaking are included.

The regular State University of Iowa teaching staff will be augmented by outstanding men from a variety of industries and other educational institutions.

Communications concerning the course should be sent to J. Wayne Deegan, 116 Engineering Building, State University of Iowa, Iowa City, Iowa.

1 1 1

### Sellers to Industrial Market Are Optimistic About 1954

An optimistic attitude toward sales to the industrial market during 1954 was revealed by a business volume poll taken among industrial distributors and manufacturers recently. The survey was made at a recent joint meeting of the Southern Industrial Distributors' Association and the American Supply & Machinery Manufacturers' Association, at Biloxi, Mississippi.

When the industrial distributors were asked about their business volume for the first half of 1954 compared with the year 1953, they forecast as follows.

15 expect business volume first six months of 1954 to average 9% above 1953.

22 expect business volume will be about the same as 1953.

12 said that business volume will decrease 9.75% from 1953.

Industrial distributors feel that rather than first half of this year showing a decline, it will be slightly better than the record year of 1953. When manufacturers selling to industry were asked the same question, they answered as follows.

23 expect business volume to increase 10.5% over 1953.

29 said business volume would be about the same as 1953.

24 said business volume would decrease, on the average, 9.33% from 1953.

The manufacturers are a little more conservative than distributors. They look for about the same volume of business in the first half of this year as last year.

As to the second half of the year,  
(Please turn to page 310)

TOPS IN QUALITY  
COMPETITIVE IN PRICE

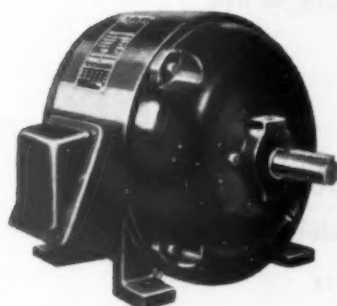
SPECIFY THE  
**New DIEHL**  
TYPE "D" MOTOR



"DESIGNED FOR MOUNTING  
IN ANY POSITION"



*...here's 12 reasons why*



*Designed and engineered for more efficient performance. Smaller in size, lighter in weight and quieter in operation.*

Consult our engineers before writing your specifications and get the benefit of 68 years of experience in the design and manufacture of general and special purpose motors

Diehl motors will still be available in old NEMA Standard frame sizes for interchange and replacement.

- Most Advanced Slot Insulation
- Machine Fitted Stator
- Rotor Keyed to Shaft
- New High Dielectric Insulated Stator Windings
- Permanently Numbered Leads
- Conduit Box, An Electrician's Delight
- Centrifugally Cast, High Density Rotor Windings
- Rugged Stress-Relieved End-Covers
- New Pre-lubricated Heavy Duty Ball Bearings
- Locked-in Ball Bearing
- Dual Ventilation System
- Extra Strong Cast Iron Frame

**DIEHL MANUFACTURING COMPANY**  
Electrical Division of THE SINGER MANUFACTURING COMPANY  
Finderne Plant, SOMERVILLE, N. J.

Please send me the following bulletins

- ☐ New Type "D" Motor Bulletin No. P 3304  
☐ Consolidated Catalog & Price List No. P 3310

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

INTEGRAL AND FRACTIONAL HORSEPOWER MOTORS ARE AVAILABLE IN A WIDE RANGE OF TYPES AND SIZES

For More Information Circle No. 338 on Inquiry Card—Page 17

with **KEX** wiping towels...

**I BUY WIPES—  
NOT WEIGHT**



**Because Every Square Inch is Usable—and  
KEX Industrial Wiping Towel Rental Service...**

- Is more economical
- Supplies towels that are safe to use
- Simplifies handling
- Saves man hours
- Better equips our men
- Relieves me of shopping around
- Is a national service I can depend on
- Is available to *all* my plants



For complete information see your  
Classified Telephone Directory for nearest  
Kex distributor, or write Kex National Service,  
295 Fifth Avenue, New York 16, N. Y.

**"KEX" NATIONAL  
SERVICE**  
REG. U.S. PAT. OFF.



*It isn't Kex unless it's imprinted with the Kex name*

For More Information Circle No. 339 on Inquiry Card—Page 17

(Continued from page 308)

industrial distributors are even more optimistic:

17 expect business volume to be up an estimated 9% over 1953.

19 expect business volume to be about the same as 1953.

12 expect business volume will be off about 6.9% from 1953.

The same optimism prevails among manufacturers:

27 expect business volume to be about 12.25% over 1953.

26 expect business to be about the same as 1953.

22 expect business volume to be off on an average of 9.33% from 1953.

1 1 1

### **New Specification Form Aids Stainless Steel Wire Buyers**

Precision stainless steel wire continues to find new and varying industrial applications. As an aid to present and potential wire users, Fort Wayne Metals, Inc., has announced a new specification form which gives purchasing, product design, and engineering departments a definitive means of specifying wire requirements. The new form covers all known stainless steel wire subjects, and is designed both to suggest uses and to simplify buyer procurement problems.

The rapidly lengthening list of uses which makes such a form extremely valuable according to Fort Wayne Metals, includes electronic shielding, industrial brushes, mine sweeper cable, non-magnetic stainless steel wire, Spiral Four cabling, magnetic recording wire, suture wire, filters and spiral thread inserts.

A new experimental application pioneered by Fort Wayne Metals is in the use of stainless steel wire as an abrasive. In this application the wire is used to form highly accurate short radius grooves in metal blocks for magnetic wire recording heads. By oxidizing the surface of the wire to varying degrees, abrasive properties are imparted. When the wire is drawn across the metal block, a groove is formed having the same accurate radius originally provided in the abrasive wire. The method gives better results than any other known procedure for forming very short radius grooves. Copies of the new form can be obtained by writing to Fort Wayne Metals, Inc., 3211 MacArthur Drive, Fort Wayne, Indiana.

# ANNOUNCING THE NEW

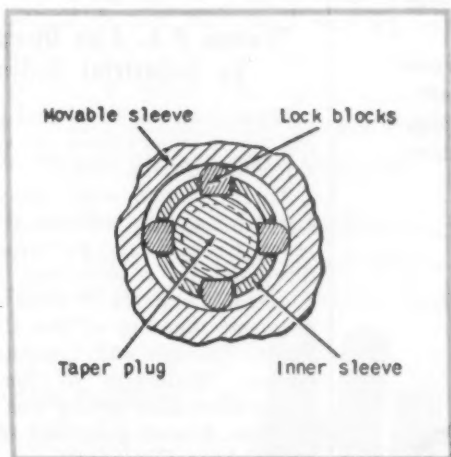
# Logan <sup>\*P.R.O.</sup> CHUCK

Pat. 2617657

... Introducing a new and unrivaled factor  
for absolute safety never before attained



● Don't let this happen to you



The Logan locking feature is provided by the wedging action of these clamping blocks against unequal tapers on a sleeve and a tapered plug.

● Catalog Mailed Promptly On Request

Designed and Manufactured Exclusively By

LOGANSPOUT MACHINE CO., INC., 843 CENTER AVE., LOGANSPOUT, IND.



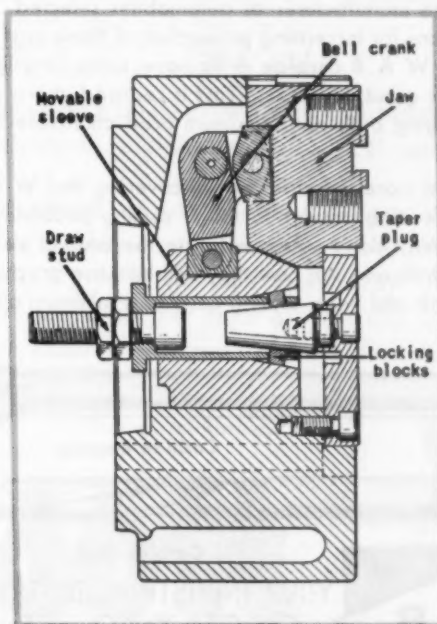
LOGAN ... FLUID POWER SPECIALISTS SINCE 1916

## It Won't Let Go!

### \*Power Release Only

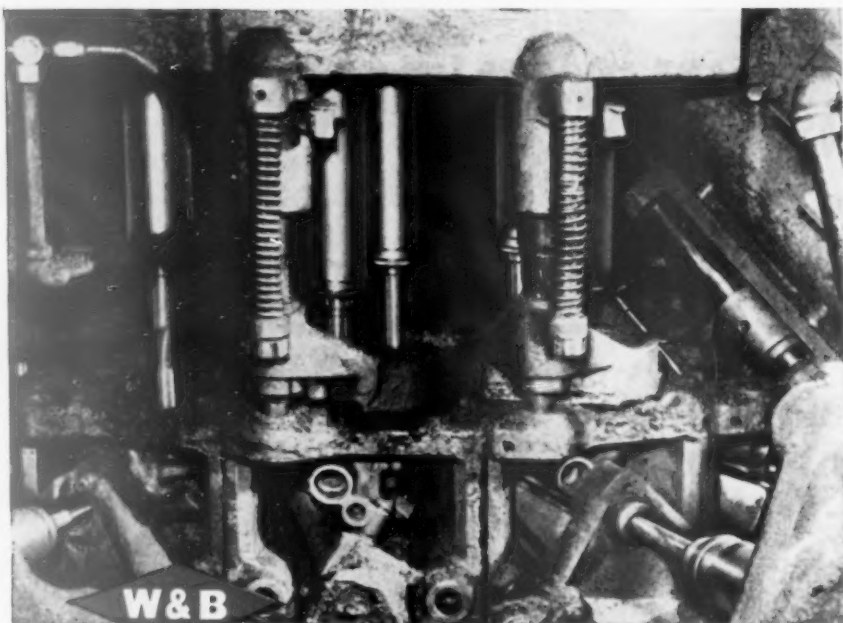
Neither centrifugal force nor power failure can cause release of the work as the Logan P.R.O. chuck is revolving on the machine spindle.

Thoroughly field-tested, this new P.R.O. chuck provides maximum holding safety.



Holding force on the Logan chuck jaws is produced by a set of bell cranks actuated by axial motion of a tapered sleeve.

● See It  
Operate  
at the  
A.S.T.E.  
Show  
BOOTH  
1550  
●



## Carbide Drills *Selected* For Long-Life and Increased Production

Illustrated above is a fifteen station vertical automatic indexing machine using sixteen Whitman & Barnes carbide drills ranging from  $\frac{1}{4}$ " to  $\frac{3}{16}$ " diameter, two carbide core drills and one carbide reamer. Simultaneous vertical, horizontal and angular drilling of oil pump bodies is done on this machine.

This large manufacturer of automobiles selected W & B carbide drills as a means for increasing production of these cast iron oil pump bodies. Because W & B carbide drills have extra-long-life and provide more holes per grind, his drilling cost is reduced, there are fewer shut-downs for changing drills and maximum production time is obtained from each machine.

More and more industries are discovering that W & B carbide drills are the cost cutting answer to tough drilling problems and operating efficiency. Why don't you investigate the unusual potentials of these high quality drills and see how they will increase production, reduce machine down-time and keep drilling costs to a minimum on your jobs.



Carbide Reamer



Carbide Drill

**W & B**

DRILLS  
REAMERS  
COUNTERBORES  
COUNTERSINKS  
CARBIDE TOOLS  
TOOL BITS  
SPECIAL TOOLS

"Makers Of Fine Tools  
Since 1848"

**YOUR INDUSTRIAL DISTRIBUTOR**  
Can Give You Quick Service  
On Whitman & Barnes Tools.  
Contact Him Today!



**WHITMAN & BARNES**

40015 Plymouth Road • Plymouth, Michigan

NEW YORK • CHICAGO • LOS ANGELES • HOUSTON • ATLANTA

For More Information Circle No. 341 on Inquiry Card—Page 17

## New Process Bonds Neoprene To Aluminum, Nylon, Etc.

A process for bonding Buna N and neoprene rubbers to Zamac materials, white metals and aluminum as well as nylon has been developed by Minnesota Rubber and Gasket Co., Minneapolis, Minn.



It is the first time these materials have been successfully bonded, according to company officials. In developing the metal bonding process, Minnesota Rubber research engineers also discovered the technique for bonding certain rubber compounds to nylon, the company says. The rubber-to-metal process is already being used by the firm to produce phonograph drive wheels. The nylon bonding technique—also perfected for the first time—is expected to eliminate need for metal inserts where nylon is used as a bearing for rubber parts.

1 1 1

## Tremco P.A. Aids Discussion on Industrial Selling

What does the industrial purchasing agent expect from his suppliers' salesmen during 1954?

This question and many others concerning the various phases of industrial sales and purchasing were discussed by a four-man panel of Cleveland experts in these fields at a recent meeting of the Cleveland Paint, Varnish and Lacquer Association. Moderator of the stimulating discussion period was Howard E. Wise, former president of Cleveland's Arco Company.

First panel speaker was Bruce Wells, purchasing agent for Tremco Manufacturing Company, who presented briefly his views toward the industrial salesman's assets and faults. Harry Walker, vice president of Arco and Ferbert-Schorndorfer companies, followed with a short talk on the functions of sales management from the organizational policy standpoint.

(Please turn to page 316)

# MAKE THIS "ONE SWEEP" TEST YOURSELF!

See how **BLUE RIBBON** Gummed Tape  
Seals Faster . . . the first time down!



*Stop-action photo proves Blue Ribbon seals with just one fast sweep of your packer's hands. Tests show an 18" carton center-strip is perma-sealed in 1.4 seconds. Proof positive of Blue Ribbon's instant action.*

**Try this test yourself.** We'll guarantee Blue Ribbon Super Standard sealing tape will close cartons and packages as fast as your operator's hands can move . . . and they are perma-sealed, ready to take the toughest stresses of all-condition shipping.

**Figure the increased production** you will get with a tape that goes down faster—users\* report as much as 25% greater output . . .

stays down to last—with no rerubbing or re-sealing. Figure the savings you'll make, too.

**You count on consistent good quality with Blue Ribbon . . . insured by 'pines to paper' control of the world's finest kraft . . . you get the same fine tape as you did on your last order—your next order—or a hundred orders after that!**

\*Names on Request

ANOTHER PRODUCT BY

# Hudson

Blue Ribbon Super Standard Gummed Tape is another Hudson Quality Product . . . a member of the renowned family of Hudson Paper Napkins, Tissues, Towels, Orange Core Gummed Tape, Kraft Wrapping Papers, Grocery and Heavy Duty Bags, Multiwall Sacks and Laminated Wrapping Papers.



Super Standard Tape



Napkins



Gummed Tape



Kraft Wrapping Paper



Grocery Bags



Multiwall Sacks

**P.S.**

**Prove it yourself!**

Send us your name on your company letterhead. We'll give you a free trial roll of Blue Ribbon tape, and a copy of "How To Cut Costs in Your Shipping Room."

**HUDSON PULP & PAPER CORP.**

Dept. P4-A, 505 Park Avenue  
New York 22, N. Y.

For More Information Circle No. 344 on Inquiry Card—Page 17



Operating over unpaved ground, this TOWMOTOR stacks high, reduces size of storage area for leading manufacturer of concrete pipe.

# PIPELINE to PROFITS

You are doing a grand job now, but if you feel there is room for improvement, consider your materials handling. No other operation offers so great an opportunity for saving time, labor, and money! And no other method or machine moves as many tons per dollar as Towmotor Fork Lift Trucks. Whatever you make, warehouse or handle, TOWMOTOR with its dozens of special attachments, its rugged economy, and its operator-ease is today's pipeline to greater profits for the boss. Send for the "Towmotor Portfolio for Operating Men." TOWMOTOR CORPORATION, Div. 1104, 1226 East 152nd Street, Cleveland 10, Ohio.



## CALL YOUR LOCAL TOWMOTOR REPRESENTATIVE

For fast service and the name of your nearest Towmotor Representative, see the Yellow Pages of your local telephone directory.

**TOWMOTOR**  
THE ONE-MAN-GANG®

**FORK LIFT TRUCKS and TRACTORS**  
SINCE 1919

IT'S HARD TO COMPETE WITH A TOWMOTOR-EQUIPPED PLANT

For More Information Circle No. 345 on Inquiry Card—Page 17

(Continued from page 312)

Next panel speaker was T. N. Armel, national industrial sales manager for The Glidden Company, who presented his opinions concerning what sales managers can do to assist and stimulate their personnel to score higher sales marks during the coming year.

Following Mr. Armel and concluding the panel discussion was Norman Cornell, vice president of Gibson-Homans Company, who outlined his thoughts on what individual salesmen can do in 1954 to improve their sales records.

Moderator Wise then conducted a 20-minute question-and-answer period during which panel members answered various questions coming from the floor.

1 1 1

## Greatest Display of Welding Equipment to Be Seen at Show

The most elaborate display of welding equipment and accessories ever assembled will be on exhibit at the Second Welding Show, sponsored by the American Welding Society, it was disclosed by Joseph G. Magrath, national secretary.

The show will be held at the Memorial Auditorium, Buffalo, May 5-7, and the society's National Spring Technical Meeting will be held at the Hotel Statler, in the same city, May 4-7.

"Every type of industry will find something new and useful among the exhibits," Mr. Magrath declared. "Never before has an exposition of such size been devoted exclusively to the welding process. Here executives may find a new method which will save his company hundreds of thousands of dollars and maintenance men, who use welding as a primary tool, will find every variety of method demonstrated."

Mr. Magrath stressed the fact that welding has made such huge technical strides in recent years that many engineers had found it impossible to keep up with all new developments. "Our technical meeting will present dozens of papers for engineers anxious to keep abreast of new methods of welding old materials and of how old methods may be adapted for use with the many new materials now coming out of the research laboratories," Mr. Magrath said.

**Use Inquiry Card—Page 17  
For More Information on All  
Products in This Issue**

# IMAGINATION



## **makes the difference**

For many years, we at Accurate have talked about our skill, experience and know-how . . . but other springmakers are unquestionably skilled, some have even more experience and must have accumulated a lot of know-how. Yet, what makes it possible for Accurate to so often devise new and better ways to make better springs at lower cost?

A customer gave us the answer in a single word—*imagination*.

If you would like to do business with an organization that has imagination . . . plenty of skill, experience and know-how . . . will approach your problems without necessarily being too influenced by conventional methods . . . send an outline of your requirements. There's no obligation and it may well be your first step towards getting better springs at lower cost. Write today. ACCURATE SPRING MFG. CO., 382<sup>nd</sup> W. Lake Street, Chicago 24, Illinois.

*Accurate*  
*Springs*  
Springs • Wireforms • Stampings

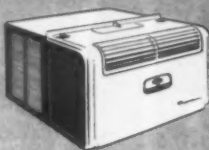
For More Information Circle No. 346 on Inquiry Card—Page 17



**Pressure Type  
Water Coolers**



**Self-Contained  
Air Conditioners**



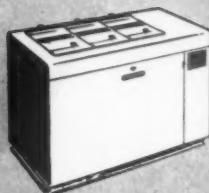
**Room Air  
Conditioners**



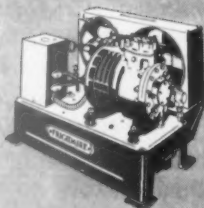
**Compartment  
Bottle Type  
Water Coolers**



**Reach-In  
Refrigerators**



**Low Temperature  
Cabinets**



**XD Motor-Miser  
Compressors**



**Ice Cube  
Makers**

## Buy Better... Buy FRIGIDAIRE

More and more men who buy for industry are making Frigidaire their first source for cooling equipment of every kind. They've found it pays real returns in higher performance, lower operating and maintenance costs, as well as in real dependability.

Call the Frigidaire distributor or Factory Branch that serves your area. Or write: Frigidaire Division, Dayton 1, Ohio.



# FRIGIDAIRE

**Water Coolers**

**Air Conditioning**

**Refrigeration**

**BUILT AND BACKED BY GENERAL MOTORS**

### Purchases "For Sale or Return"

(Continued from page 85)

hand a consignment of goods for sale does not pass title at any time, nor does it contemplate that it should be passed. The very term implies an agency and that the title is in the consignor, the consignee being his agent."

#### A Classic Precedent

A famous decision in an action involving a shipment of arms to Mexico, for sale to the warring factions in that country at the time of the overthrow of the empire of Maximilian, was based on a contract set out in a letter.

"Dear Sir: Enclosed please find our bill of sundry arms, etc., amounting to \$39,887.60 for which amount please give us credit on consignment account. As mutually agreed, we consign these arms to your care, to be shipped to Mexico and to be sold there by you to the best advantage. Should these arms not be disposed of at the whole amount charged we have to bear the loss. Should there be any profit realized over the above amount of bill, such profit shall be equally divided between yourself and us.

"Also it is understood that all these goods are shipped by us free of any expense to us, and that in case all or any of them should not be sold, they shall be returned to us free of all charges."

#### Cargo Is Jettisoned

The goods were shipped, but the vessel carrying the cargo met a heavy storm and the arms cargo was jettisoned to save the ship. In the litigation that followed, the shippers contended that the arms were shipped under a sale or return agreement by which title passed to their custodian and as a consequence he was obligated to pay for the goods as the time for their return had expired.

This custodian of the arms, on the other hand, maintained that the transaction was a consignment, that title to the goods remained in the shippers, and that the only liability resting on him was a reasonable care for the safety of the goods, which he had exercised.

The Supreme Court of the United States, holding the transaction a consignment and not a purchase for sale or return, set out a definition of purchases for sale or return that has since been followed as unquestioned authority.

(Please turn to page 322)

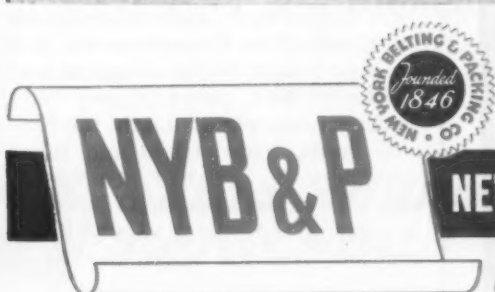
For More Information Circle No. 347 on Inquiry Card—Page 17

**You name it...**  
**NYB&P**  
**makes a belt**  
**to carry it!**



Broad and varied is NY-B&P's range of conveyor and elevator belting. Equally broad and varied—and more than a century long—is NY-B&P's experience in this specialized field. That's why your local NYB&P Distributor is your best bet when you need a conveyor belt for *any* purpose.

He can provide belting of the right strength... the right grade and thickness of cover... and with any special construction features such as flanged edges, crepe or traction tread, or NYB&P's unique nylon-cotton breaker strip that provides balanced cushioning of load impact. Ask for the NYB&P Conveyor and Elevator Belting catalog.



**V-BELTS AND "TIMING" BELTS**

**NYB&P INDUSTRIAL RUBBER PRODUCTS**

**NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.**

**America's Oldest Manufacturer of Industrial Rubber Products**



**CAMPBELL  
CHAIN**

Wherever  
you need chain,  
in any size  
or grade,  
to any  
desired  
specification . . .

**CAMPBELL CHAIN**

*Company*

Main Office: York, Pa.  
West Burlington, Iowa  
Portland, Oregon  
Sacramento, California

**Purchases "For Sale or Return"**

(Continued from page 318)

"Was the contract a contract of 'sale or return'? We think not. The class of contracts known as contracts of 'sale or return' exist where the privilege of purchase or return is not dependent upon the character or quality of the property sold, but rests entirely upon the option of the purchaser to retain or return.

"In this class of cases the title passes to the purchaser subject to his option to return the property within a time specified or a reasonable time and if, before the expiration of such time, or the exercise of the option given, the property is destroyed, even by inevitable accident, the buyer is responsible for the price."

1 1 1

**From Destruction to Production**

(Continued from page 93)

production facilities and general offices. Assembly, charging and shipping of telephone and power batteries was to be handled, along with casting, pasting and plate processing, in the habitable sections of the main plant. Industrial truck, mining, railroad and marine batteries were to be turned out in a building leased from the nearby Alan Wood Steel Co. Timekeeping, accounting, and sales moved into an empty house about seven or eight blocks from C&D's plant. Purchasing was to remain at the ruined building and coordinate production supply to the two production points.

"While all the supplies on hand in the plant were destroyed, we still had our warehouse in Norristown to draw from," Mr. Eble declared. "Naturally, though, we couldn't touch these stores until the insurance company was through checking our supply losses. So, while we had the possibility of replacing some of our material from Norristown, other items which had been entirely stored at the plant had to be ordered anew. We could replace our hard rubber, single and multicell jars and covers, polystyrene containers and microporous separators from the warehouse. But we now had to set up complete new stocks of lead plated copper connectors, name plates, decals, instruction cards, hydrometers and thermometers. So we had 'temporary' stock to order, material ordered on a basis of immediate supply to be trucked from the warehouse when

(Please turn to page 324)

For More Information Circle No. 351 on Inquiry Card—Page 17

# Important News

## *for users of industrial electronic equipment*

### NEW SIMPLIFIED ELECTRON TUBE INVENTORY PLAN



If your production line operation depends on vital electronic equipment, an unexpected shortage of key tube types could cause trouble.

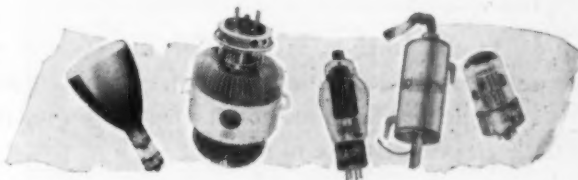
To help you guard against a possible equipment shutdown, your RCA Tube Distributor now offers a new *RCA Tube Inventory Maintenance Plan* . . . designed to take the guesswork out of your tube inventory control. This plan enables you to set up accurate reserve stocks and helps to assure smooth and uninterrupted production-line operation.

There's nothing for you to sign . . . nothing for you to buy to get the plan started. Your RCA Tube Distributor will analyze your tube requirements and prepare a suggested tube inventory—tailored to your equipment and your operation. There is no charge or obligation for this service.



#### TOP-NOTCH DISTRIBUTOR SERVICE

The services of your RCA Tube Distributor are as close as the telephone on your desk. When you buy through your local RCA Distributor, you simplify and centralize ordering procedures. Your RCA Tube Distributor acts as your local warehouse . . . assures you of quick, dependable delivery from his large and well-balanced stocks. You'll find him friendly, courteous, ready to help you with your tube requirements.



#### DEPENDABLE PRODUCTS DESIGNED FOR THE JOB

RCA Industrial Tubes offer you high quality and long service life. Developed specifically for industrial applications, they can be counted on to deliver reliable performance. There's an RCA tube for virtually every kind of electronic equipment in use. So when you replace, use RCA tubes for that extra margin of dependability and operating economy.

*For prompt, expert service on your tube requirements, rely on your local RCA Tube Distributor*



**RADIO CORPORATION of AMERICA**  
ELECTRON TUBES

HARRISON, N. J.

# ROLOCK

FABRICATED HEAT AND CORROSION RESISTANT ALLOYS



*Loose joints  
that beat  
stiff competition*

When you are heat-treating metal parts at the extremely high temperature of 2350° F . . . followed by a brine quench . . . basket construction is vitally important.

In this instance, a large auto manufacturer asked Rolock engineers for a quantity of basket assemblies that would withstand the heat and shock of martempering auto parts . . . with the greatest resistance to warping.

The answer was 18"-dia., 7½" deep Inconel baskets of 26 lbs. each. They were fabricated from ½"-dia. rod threaded thru flat bar and held in place by washers welded to the ends of the bar to form a loose jointed carrier . . . to take expansion and contraction without damage. A 4-mesh .080 wire disc is placed loosely in the bottom of the baskets.

There are many similar operations where loose joints will greatly extend basket life, reducing hourly costs . . . reflected in competitive quotations. Put us on the spot for solving heat-treating problems. We like it!

**SEND FOR CATALOG B-8 (HEAT TREATING)  
ON B-9 (CORROSION RESISTANT)**

SALES AND SERVICE REPRESENTATIVES FROM COAST TO COAST  
**ROLOCK INC. • 1272 KINGS HIGHWAY, FAIRFIELD, CONN.**

**JOB-ENGINEERED** for better work  
Easier Operation, Lower Cost

1RLB4B

## From Destruction to Production

(Continued from page 322)

it was possible. The other items had to be ordered on a quantity basis and then a place found to store them.

"Actually, though, our biggest problem was in finding plant materials such as the acid tanks, charging panels, small generators, etc. At times we had duplications of orders because of the emergency ordering setup, which was difficult to control. All in all, though, things worked out pretty well. We learned, the hard way, the value of a good purchasing setup, what good vendor relations mean, and how everyone, including competitors, are willing to lend a helping hand to people in trouble."

Today, C&D Batteries, Inc., is operating full swing. Bright yellow fork trucks thread through lanes cleared in the debris of the burned out plant to carry material from one location to another. Down at the Allan Wood location, big acid vats, charging panels and lines of cable look curious in the big building which once turned out steel. Up on Elm Street, adding and calculating machines whir in the kitchen, dining room and bedrooms of a once empty house. A big Mosler fire-resistive safe occupies a choice TV site in the house's living room.

But, C&D is operating again. It's turning out its full quota of batteries. At times, it seems incongruous to see shiny new desks and filing cabinets in the few smoke stained rooms of the plant that are still usable. However, the proof that this company succeeded in defeating the destructive fire is always present. How they did it is something that even they are hard put to explain. But, it was done and the proof is right there at Washington and Cherry Streets in Conshohocken, Pa.

1 1 1

## Delivery Truck Equipment

(Continued from page 95)

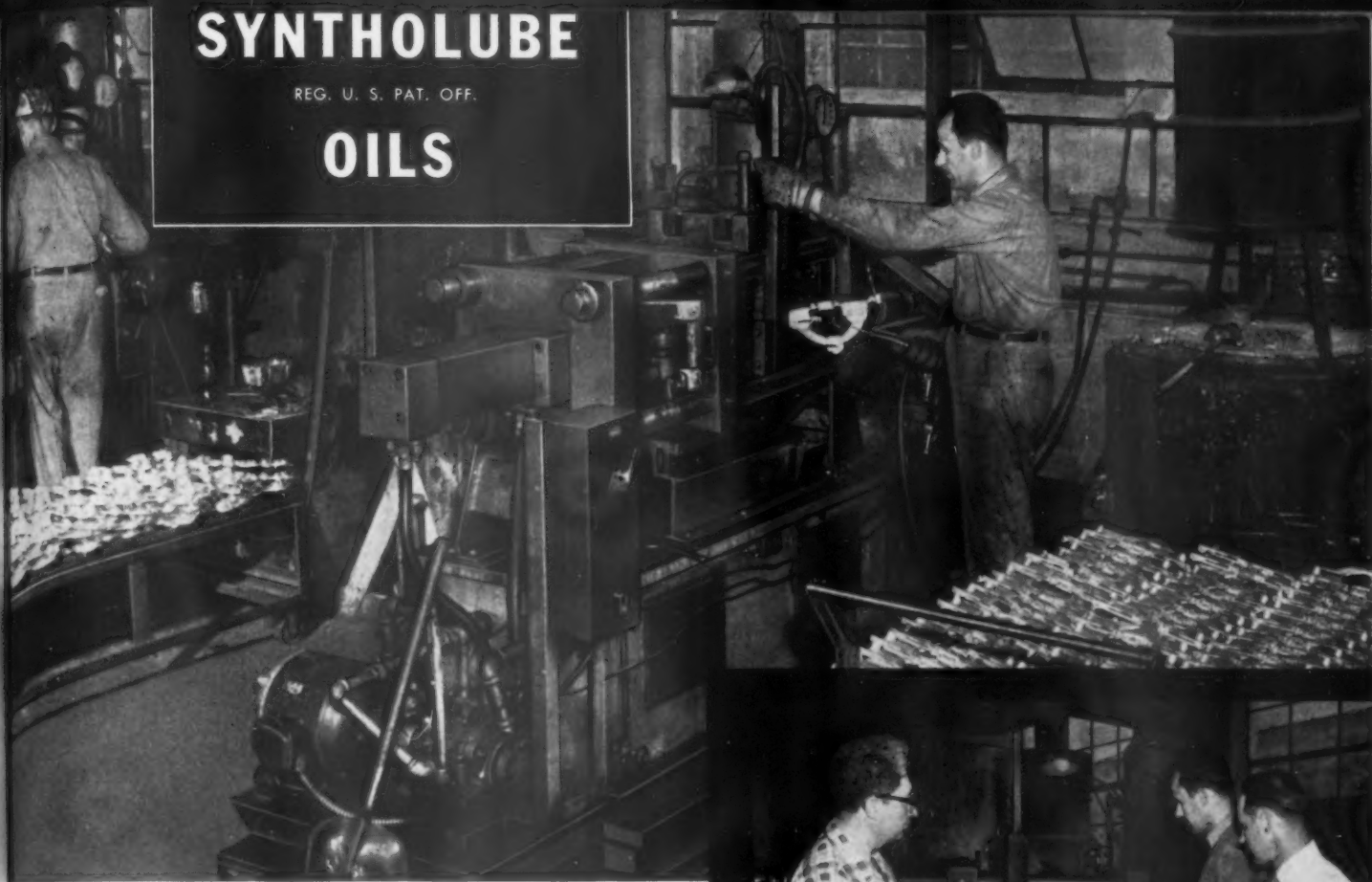
These are challenging questions, designed to stimulate attention to a phase of values and operating costs that are sometimes overlooked and is not always abreast of the operations that occur within your sight. Basically, they all come down to the specifications and procurement of adequate original equipment. The answers will vary according to the situation.

(Please turn to page 330)

# SYNTHOLUBE

REG. U. S. PAT. OFF.

## OILS



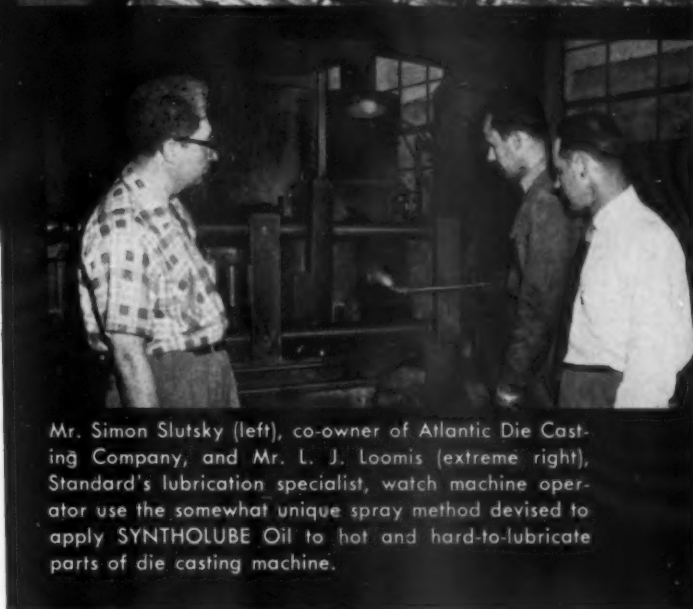
## Beats heat in die casting machines...

● The Atlantic Die Casting Company specializes in aluminum die casting. Using hydraulic machines of its own design, this company turns out amazingly intricate parts at a high rate of production. But it was not always easy going.

There had been a problem of lubrication. The exceedingly high temperatures necessary for die casting made it difficult to lubricate machine parts in the area of the heated dies. Various expensive and complicated lubricating mixtures were tried. Under the high temperatures, the lubricants thinned and did not cling well to the hot surfaces. Oxidation of the lubricants produced deposits. Resulting troubles: sticking of machine parts, particularly ejector pins; staining of aluminum castings, down-time for cleaning.

Consulted on this problem, a Standard Oil lubrication specialist recommended the lubricant that had been developed by Standard Oil for just such high temperature applications: SYNTHOLUBE Oil.

This unique product has made short work of the



Mr. Simon Slutsky (left), co-owner of Atlantic Die Casting Company, and Mr. L. J. Loomis (extreme right), Standard's lubrication specialist, watch machine operator use the somewhat unique spray method devised to apply SYNTHOLUBE Oil to hot and hard-to-lubricate parts of die casting machine.

lubrication troubles. It does not "run" from hot surfaces. Its unusual depolymerizing characteristic has prevented the formation of troublesome deposits. In addition to other lubricating benefits, SYNTHOLUBE has eliminated the expense of using costly lubricating mixtures.

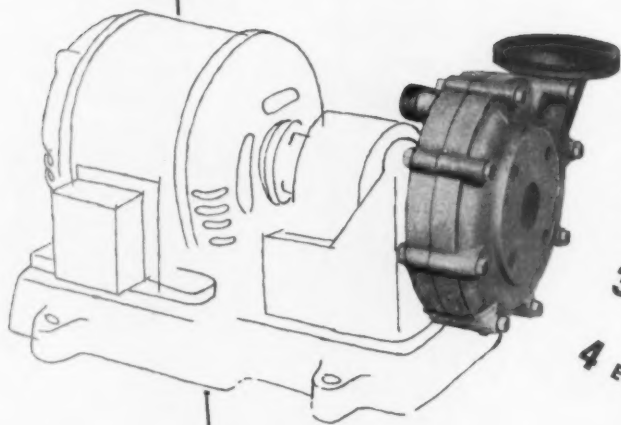
Whatever your lubricating problem or need, you'll find that a Standard Oil lubrication specialist has the engineering ability and the petroleum product to help you. You can reach the specialist serving your area of the Midwest by phoning your local Standard Oil office. Or, write: Standard Oil Company, 910 So. Michigan Ave., Chicago 80, Ill.

## STANDARD OIL COMPANY



(Indiana)

only **1** material has all **4**



**1** CORROSION RESISTANCE

**2** STRENGTH

**3** DIMENSIONAL STABILITY

**4** ECONOMY

## ...for ACID PUMPS for instance

One of the strongest plastics known . . . Ace Hard Rubber . . . got the nod for the impeller and casings of this acid pump. Why? (1) It's resistant to almost all corrosives; (2) High strength and abrasion resistance; (3) Won't warp or swell; and (4) Costs much less than corrosion-resistant alloys. Typical result: On one job this hard rubber pump handles 12% hydrofluoric acid, turns on and off twice a minute, 24 hours a day, six days a week . . . a mighty tough test for corrosion-resistant materials?

Many other Ace hard rubber compounds are available . . . tensiles as high as 10,000 psi, moisture absorption as low as 0.04%, power factor as low as 0.006, heat resistance to 300 Deg. F. . . also many new plastics and rubber-resin blends. All Ace compounds are tailor-made to fit the job . . . never over-designed. That's why Ace is the *only* material that meets all four big requirements for parts like acid pumps.



and here's a **5<sup>th</sup>**

Hard rubber sleeve provides electrical insulation as well as mechanical and chemical strength in this coupling for electroplating agitator.



80-pg. Ace handbook free to design engineers.

## ACE<sup>®</sup> rubber and plastic products

**AMERICAN HARD RUBBER COMPANY**  
93 WORTH STREET • NEW YORK 13, N. Y.

For More Information Circle No. 360 on Inquiry Card—Page 17

## Delivery Truck Equipment

(Continued from page 324)

cording to different operating requirements and conditions, but certain general principles will apply:

a. Route truck life and costs should be computed at more than twice the time in which you depreciate trucks in your tax returns.

b. The first cost of a truck is as little as 3% of its operating, maintenance, and driver cost during its long life.

c. Time saved in loading, getting through traffic, and working the load can boost time spent with customers and prospects by as much as 50%.

d. Routemen who have operated various types of trucks and bodies report that there is as much as 2 hours per day difference between them.

e. In home deliveries, salesmen report 35% to 40% more customers served per day with the most suitable units for their needs.

f. Route salesmen today expect the most efficient equipment, to make more in commissions in less time—"or else".

g. Truck operating and maintenance costs are sky-high today, and failure to check wearing parts specifications before buying, and also to observe permissible weights of bodies and payloads on tires, is like throwing money away.

h. Overloading is more often due to excess body and rack weights than to excess payload. Results include frequent replacement of brake linings, clutch facings, axle bearings, springs, tires, etc., extra strain on the engine, and increased gasoline and oil consumption.

If you haven't asked and answered these fundamental questions, you cannot be sure of your delivery efficiency, equipment and operating economy. You may find your profit position to be very vulnerable in the event of a buying slowdown and loss of volume.

## Modernize Public Purchasing Laws

(Continued from page 116)

have to stretch the elasticity of statutes to the breaking point and risk their own personal reputations in the process. In their interest, and in the public interest, legislative clarification and standardization of purchasing policies is needed, rather than continue to invoke personal judgment and impose individual responsibility.

This brings us to the crux of this discussion—the need of modernizing statutes and ordinances to sanction sound, modern, businesslike procedures in public purchasing. Purchase laws and ordinances should be resurveyed and revised to permit transacting public business as expeditiously and with the

(Please turn to page 334)



*"You see POWELL VALVES everywhere!"*

Not surprising when you realize that Powell makes more kinds of valves and has probably solved more valve problems than any other organization in the world. And this has been going on since 1846.

Wherever flow requires dependable control,

there's the place for Powell Valves—available through distributors in principal cities. Made  $\frac{1}{8}$ " to 30" and 125 pounds to 2500 pounds W. S. P. Bronze, iron, steel and corrosion resistant alloys. On problems, write direct to The Wm. Powell Company, Cincinnati 22, Ohio.

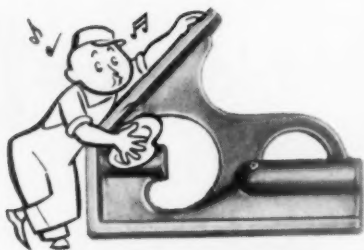
**CONTROLS FOR THE LIFE LINES OF INDUSTRY**



# Powell Valves

*108th  
year*

For More Information Circle No. 362 on Inquiry Card—Page 17



**CLEAN**



**BRIGHT**



**ACCURATE**



**STRONG**

Clean, bright, accurate, strong — that's the story of Ritco Drop Forgings. We produce parts to your blueprint in steel or non-ferrous metals, in weights from ¼ lb. to 15 lbs.

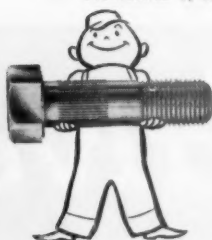
Come to Ritco for Drop Forgings, special fasteners, and finished bolts with regular or heavy heads. Also, take advantage of our complete facilities for finishing — machining and grinding. Send blueprints and specifications for free estimates.



SERVING AMERICAN INDUSTRY  
FOR 120 YEARS

**RITCO**

Rhode Island Tool Company  
148 West River Street  
Providence 1, Rhode Island



Exclusive New England  
Representatives for  
Cleveland Cap Screw Co.

## Modernize Public Purchasing Laws

(Continued from page 330)

same judgment and acumen as applies in commercial practice. And this can be accomplished without voiding any of the safeguards against malfeasance in public office. It is not claimed that this is impossible under existing statutes, but the task is difficult and performance sometimes falls short of the standards. As a governmental purchasing agent for a great many years, the writer has never faced a situation that could not be resolved within the letter and spirit of the law, but many times has wished for a more practical method of operation.

### Objectives and Means

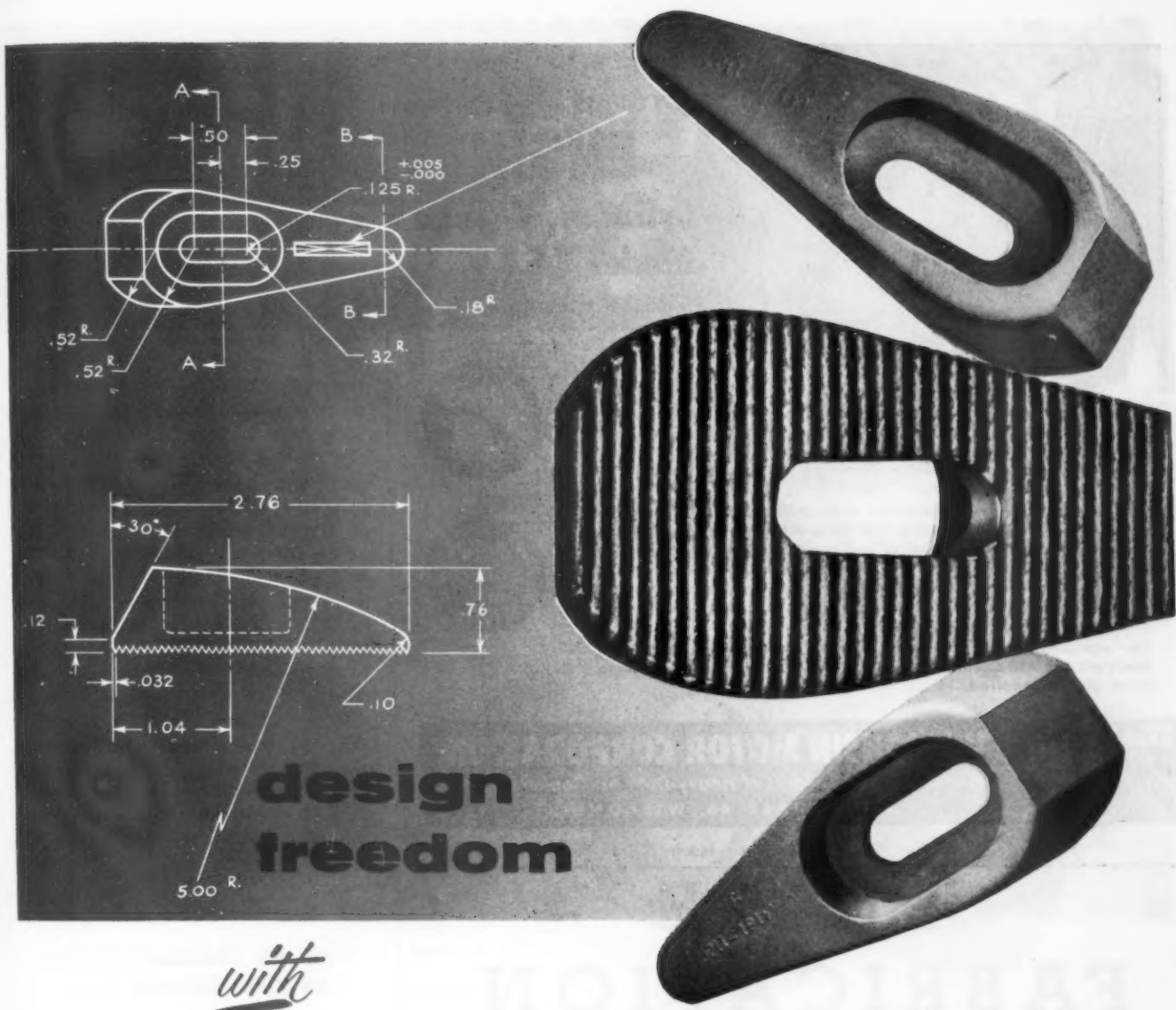
The objective of centralized purchasing for government is to get the best for the taxpayers and the wards of government with the least expense, and accomplishment must be measured against this double standard. We can come nearer attainment of this objective by amending and modernizing purchasing statutes and adopting somewhat standardized terminology, forms, and regulations. All municipal officers, associations, governmental officials and legislators, and taxpayers should interest themselves in this project.

Existing statutes should be amended as necessary to facilitate the adoption of approved lists of manufacturers and producers or their direct distributors, as constituting "competitive bidding" for specialized items of equipment and groups of commodities on the "small order" list, under an affidavit that the best prices and terms made to the trade apply to such purchases, and with the stipulation that purchase will actually be made at the best price developed for particular articles in this type of competition, possibly on a minimum order basis. They should be amended to permit the purchase of items established as non-competitive, from the original source of supply or his direct distributor at current basic prices for the articles and the best terms available to the trade.

This is a start. Purchasing officials throughout the nation will be glad to add further suggestions. The work of the task forces of the Hoover Commission have done valuable work at the national level that could serve as a model. The need exists, and the know-how is available. But who will undertake

(Please turn to page 338)

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**design  
freedom**

*with*

## CRUCIBLE ACCUMET PRECISION INVESTMENT CASTINGS...

Here's another good example of how Accumet Precision Investment Castings help put an end to design problems.

To machine the curved and tapered surfaces, elongated hole and counterbore, and serrations on this AISI 4140 alloy steel aircraft part, would have been too costly to be practical. But the parts were quickly and economically produced by investment casting.

More and more parts are being *designed* specifically for the investment casting proc-

ess. And there are good reasons why. Crucible Accumet Precision Castings allow the greatest freedom of design. Intricately shaped parts can be made of any grade of steel, including high-alloys, in large quantities and at low cost.

It will pay you to let your local Crucible representative give you the whole story of how Accumet Precision Castings can help you produce a better product at lower cost.



**CRUCIBLE**

first name in special purpose steels

54 years of *Fine* steelmaking

**ACCUMET PRECISION CASTINGS**

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.  
 REX HIGH SPEED • TOOL • REZISTAL STAINLESS • ALLOY • MAX-EL • SPECIAL PURPOSE STEELS

For More Information Circle No. 365 on Inquiry Card—Page 17



# a Bigger, Better **WISCONSIN**

HEAVY-DUTY *Air-Cooled*

## ENGINE

**4-Cylinder, V-Type  
Model VG4D**

**25 to 36 Horsepower**

One of the outstanding performance characteristics of this fine engine is its exceptionally smooth running. Among other things, this is accomplished by means of accurately balanced weights, forged to the cheeks of the crankshaft, counter-balancing reciprocating forces in the connecting rods and pistons.

This engine is regularly furnished with Stellite exhaust valves and valve seat inserts, with positive type valve rotators—highly desirable for prolonging the life of valves and greatly reducing the frequency of valve servicing. Rotators cause a slow rotation of valve during time it is lifted off its seat by the camshaft, providing new positioning every time the valve seats, assuring uniform wear and retarding lead or carbon build-up.

For equipment requiring 25 to 36 hp., specify the Wisconsin Heavy-Duty AIR-COOLED Model VG4D. Detailed engineering data gladly supplied.

**MORE**  
**Power**  
TO FIT THE  
MACHINE

**MORE**  
**Power**  
TO FIT THE  
JOB



**WISCONSIN MOTOR CORPORATION**

World's Largest Builders of Heavy-Duty Air-Cooled Engines  
MILWAUKEE 46, WISCONSIN

For More Information Circle No. 366 on Inquiry Card—Page 17

# PLATE FABRICATION

**CHROME IRON ALLOYS • CARBON STEEL**

**CHROME NICKEL • SILICON BRONZES**

**MONEL • ALUMINUM • NICKEL CLAD • ETC.**

**GOOD DESIGN—RIGHT MATERIALS**

**EXPERT WORKMANSHIP . . .**

**AT A FAIR PRICE**

Pressure Vessels for the Chemical and Oil Industries—X-ray equipment for inspection of welds and Hartford Inspection available if required. Use our valuable new Bulletin as a handy reference guide . . . contains partial analysis of A.S.M.E. code for Unfired Pressure Vessels.



**DOWNINGTOWN IRON WORKS, INC.**  
DOWNINGTOWN-PENNA.

STEEL AND ALLOY PLATE FABRICATION AND HEAT EXCHANGERS

NEW YORK OFFICE: 30 CHURCH STREET

DIVISION OF  
PRESSED STEEL  
TANK COMPANY



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## Modernize Public Purchasing Laws

(Continued from page 334)

the task of remedying the situation? There are any number of interested groups, such as the National Institute of Governmental Purchasing, the National Association of State Purchasing Officials, and the National Association of Purchasing Agents, all working on the fringes of the problem. But time is of the essence, and their efforts need to be correlated and brought to fruition.

Perhaps it is a good omen that just at this time a new Rockefeller sponsored group is being established for research and study of the affairs of government—the Government Affairs Foundation, Inc. The Hon. Frank C. Moore, Lieutenant Governor of New York State, will head this group. He brings to the work a wealth of experience in governmental administration and finance. He will be working with an expert staff, and could lend invaluable aid and prestige to the successful conclusion of the project to improve governmental purchasing techniques through the modernization of purchase statutes and ordinances.

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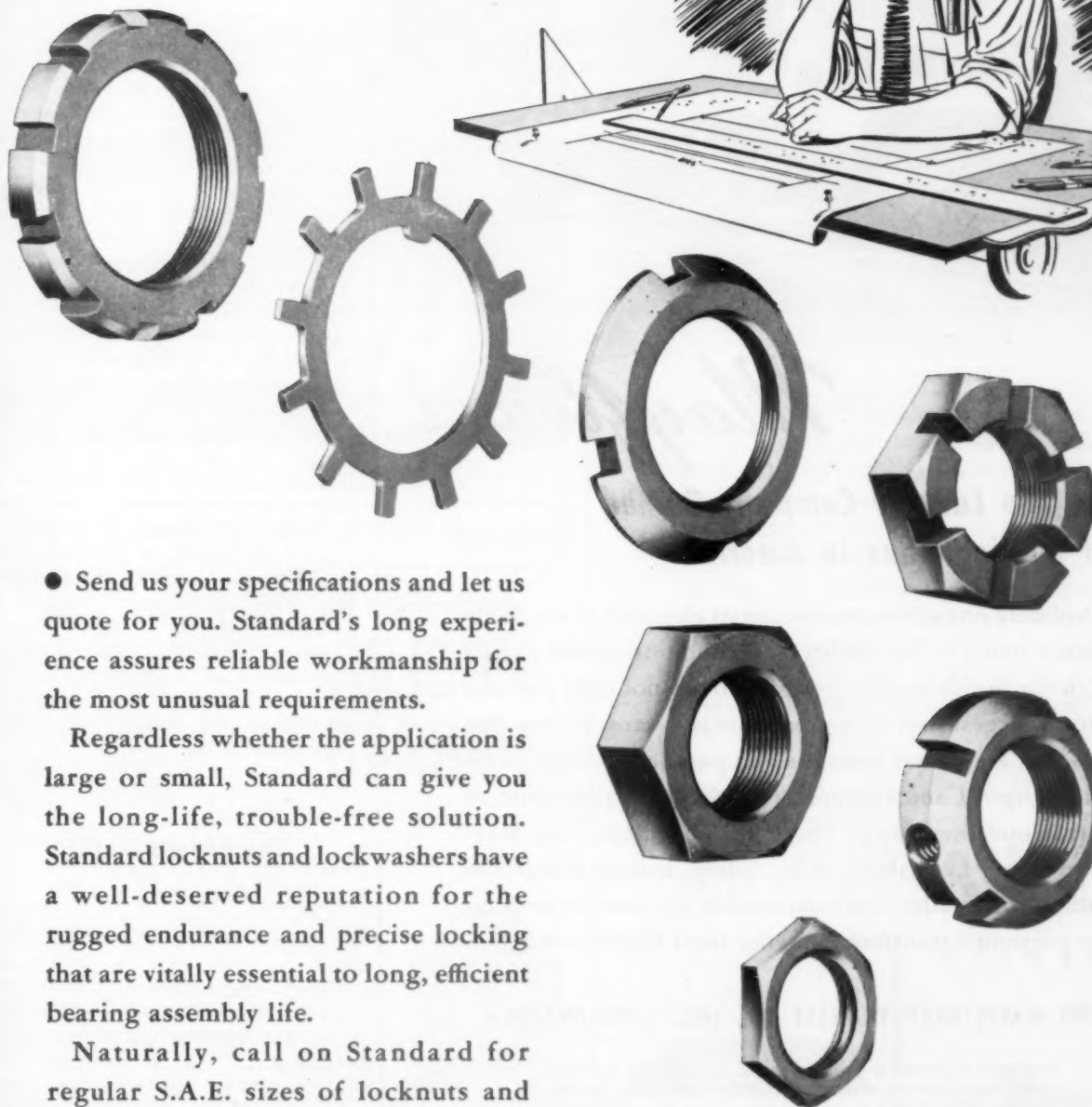
## Find Dry Chemical Effective on Vinyl Chloride Fires

Fires in vinyl chloride, a highly volatile chemical used in the plastics industry, can be extinguished effectively with dry chemical fire equipment. That is the report from preliminary tests made by Ansul Chemical Company, of Marinette, Wis., on its fire test field.

The tests, made at the request of a midwestern chemical company, indicate that vinyl chloride may have a fire intensity approximately three times greater than liquid propane under corresponding conditions of pressure and temperature. Because of this, Ansul engineers recommend that three to four times more dry chemical equipment be used than that required to extinguish the liquid propane fires.

Ansul engineers note that vinyl chloride fires can be extinguished effectively with dry chemical equipment, but they strongly recommend an intensive training course, in which actual vinyl chloride practice fires are extinguished, for all personnel coming into contact with the chemical.

# SPECIAL APPLICATION PROBLEM ?



● Send us your specifications and let us quote for you. Standard's long experience assures reliable workmanship for the most unusual requirements.

Regardless whether the application is large or small, Standard can give you the long-life, trouble-free solution. Standard locknuts and lockwashers have a well-deserved reputation for the rugged endurance and precise locking that are vitally essential to long, efficient bearing assembly life.

Naturally, call on Standard for regular S.A.E. sizes of locknuts and lockwashers, too.

Write today for Standard's detailed Bulletin #32, c/o Dept. C-4.



## STANDARD

**Locknut and Lockwasher, Inc.**

2250-56 VALLEY AVE. • INDIANAPOLIS 18, INDIANA



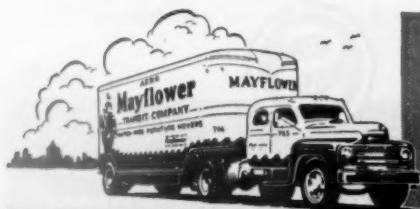
# Mayflower

## Operates the Largest Company-Owned Fleet of Moving Vans in America!

► Probably one of the most essential elements of any long-distance move is the quality and condition of the van in which the goods are moved. Mayflower not only puts the nation's largest fleet of company-owned vans at your disposal, but Mayflower vans are all up-to-date models, especially designed and equipped for maximum protection of the furniture they carry. There are no tailgates on Mayflower vans. Everything rides safely, locked inside the weatherproof trailer. For safe, trouble-free service on company personnel transfers, call your local Mayflower agent.

**AERO MAYFLOWER TRANSIT CO., INC. • INDIANAPOLIS**

Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.



**AERO Mayflower**  
*America's Finest*

**NATION-WIDE FURNITURE MOVERS**

For More Information Circle No. 369 on Inquiry Card—Page 17

## When Seller Breaches Contract

(Continued from page 124)

ages where the testimony shows that the seller practiced fraud to the purchaser's considerable disadvantage and detriment.

### Illegal Contracts

And conversely, if a purchaser acquiesces with a seller in an illegal contract, not only is the purchaser deprived from recovering damages for the seller's breach, but the purchaser cannot enforce the contract. For example, according to a late higher court decision, a purchaser who purchases a ticket on a chance to win something of value cannot compel the seller of the ticket to deliver the merchandise to the successful winner.

In *Holmes v. Saunders*, 250 Pac. (2d) 269, it was shown that an organization sold tickets at \$1.00 each which entitled the purchasers to six month's subscription to a magazine, and a numbered ticket to be drawn at the Auditorium Arena on a certain date for a Buick Sedan Automobile.

A man proved that his ticket was drawn and he was declared to be winner of the Buick automobile. However, he was not permitted to take possession of the automobile. He filed suit asking the court to compel the seller of the tickets to give him possession of the automobile. The higher court refused to do so, saying:

"Since plaintiff's (purchaser's) cause of action depends on his success in a lottery, which is a criminal offense, the doors of the courts are closed to him."

1 1 1

## The Buyer's Market

(Continued from page 77)

tainly are not getting the lowest price.

Purchasing enjoys its present position, not because we have willed it so, but because top management is convinced that it deserves this position. If, by our acts, we prove unworthy of our position, then we must accept the consequences.

The acts of any individual are reflected on the entire profession, and we would all do well to consider from time to time the standards of the National Association of Purchasing Agents. If these are studied and the principles adhered to, purchasing as a profession will continue to grow in stature.

The **NEWEST** development  
in V-ring  
packings

## LINEAR VEE-DAM\* RINGS



Foolproof to assemble  
... leakproof in operation  
Moulded-in rubber dams seal  
off labyrinth and lateral flow,  
even when gaps occur in the ring  
joint through faulty installation.  
Precision moulded of fabric-rein-  
forced synthetic rubber. Write  
for details.

\*Patent Pending

"PERFECTLY ENGINEERED PACKINGS"

# LINEAR

LINEAR Inc., State Rd. & Levick St., Philadelphia 35, Pa

For More Information Circle No. 378 on Inquiry Card—Page 17



Now **HERE'S** a SENSATIONAL Expansion!

**NEW!** Brightboy  
with **SILICON  
CARBIDE**

For Faster, Finer Finishing of

- ALL METALS • PLASTICS
- LAMINATED MATERIALS

Beat competition with versatile Brightboy's broader,  
better methods and faster, finer finishing—BUR-  
RING, CLEANING, FINISHING, POLISH-  
ING, IN ONE OPERATION. Time savings as  
high as 50%!

In answer to growing demand  
THE COMPLETE BRIGHTBOY  
LINE IS NOW COMPOUNDED  
WITH EITHER ALUMINUM  
OXIDE OR SILICON CARBIDE  
GRAIN

and —  
Brightboy is now avail-  
able in a wide variety  
of grain sizes ranging  
from extra coarse to ex-  
tra fine, in soft, firm  
and tough rubber bind-  
ers.



Write us for detailed information.

BRIGHTBOY INDUSTRIAL DIVISION  
WELDON ROBERTS RUBBER CO.  
95 No. 13th St. Newark 7, N. J.

America's Pioneer Manufacturers  
of Rubber-Bonded Abrasives



For More Information Circle No. 379 on Inquiry Card—Page 17  
APRIL, 1954

# Service

the  
fourth  
dimension  
of  
business



Here, at the Scintilla Division of Bendix, the word  
SERVICE is much more than the name of a depart-  
ment. It is a vitally important part of our over-all  
operations. Together with Research, Engineering and  
Manufacturing—Service might well be termed the  
fourth dimension of our business.

To implement this policy of following through to  
see that every customer gets the full performance built  
into each product, the Scintilla Division has a world-  
wide service organization backed up by factory-  
trained service men strategically located to meet  
service emergencies.

Service data, covering installation, operation and  
repairs as well as adequate distribution of parts,  
makes up a complete service program.

Just another reason why the name Bendix has be-  
come "The Most Trusted Name in Ignition."

**SCINTILLA  
DIVISION**



OF **Bendix**  
AVIATION CORPORATION

SIDNEY, NEW YORK

Export Sales: Bendix International Division, 205 East 42nd St., New York 17, N. Y.

Factory Branch Offices:

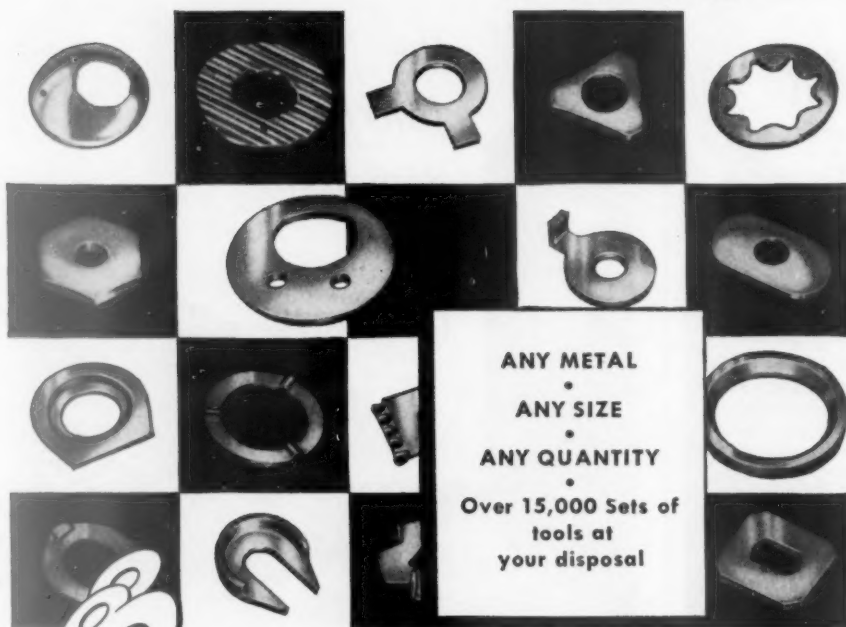
117 E. Providencia Avenue, Burbank, California • Brouwer Building,  
176 W. Wisconsin Avenue, Milwaukee, Wisconsin • Stephenson Building,  
6560 Cass Avenue, Detroit 2, Michigan • 512 West Avenue, Jenkintown,  
Pennsylvania • 8401 Cedar Springs Rd., Dallas 19, Texas • American  
Building, 4 South Main Street, Dayton 2, Ohio

For More Information Circle No. 380 on Inquiry Card—Page 17  
345

IT'S A SMART MOVE TO ORDER

## Special Washers

FROM A LEADER



ANY METAL  
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ANY SIZE  
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Over 15,000 Sets of  
tools at  
your disposal

**THE E-Master Products Co.**  
6400 PARK AVENUE • Diamond 1-1740 • CLEVELAND 5, OHIO  
For More Information Circle No. 381 on Inquiry Card—Page 17

## Towmotor Has New Fork Truck Device Which Eliminates Pallets

A new handling device, called the Tow-Loader and just announced by Towmotor Corporation, Cleveland, Ohio, makes it possible to use thin pallet sheets in place of the conventional fork entry type pallets used in handling unit loads.

Consisting of a modified Towmotor Unloader Accessory with a gripping device built into the pusher frame, the Tow-Loader pulls the palletized load onto either blades or forks and pushes it off at set-down points.

Through the use of a Tow-Loader at both shipping and receiving ends, pallet loads can be loaded, shipped and unloaded swiftly at minimum cost. With the Tow-Loader, the thickness of the ordinary pallet is saved and the space is completely utilized. Since the cost of the pallet sheets is small, they are left with the unit loads so that, if desired, a Tow-Loader at the receiving end can unload the carrier in record time.

Once the unit loads have been placed on the pallet sheets, all further handling operations by the Tow-Loader are completely mechanical.

## BUYER'S & SELLER'S MART

Contract Work • Equipment For Sale • Employment and Business Opportunities

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Undisplayed (set solid) ..... 90¢ line  
Positions Wanted ..... 45¢ line  
  
Displayed ..... \$8.50 inch

### REQUIREMENTS

Undisplayed (want-ad style), minimum charge 4 lines, prepaid. Figure forty-four letter spaces (five average words) to a line. Add one line for box number address; replies forwarded without charge. Discount of 10% for twelve consecutive displayed insertions. Forms close 15th of month preceding date of publication.

Send orders to: CLASSIFIED DEPARTMENT

PURCHASING

205 East 42nd Street, New York 17, New York

### Positions Wanted

Purchasing Agent or assistant—extensive chemical, oil, and industrial procurement experience. Able to organize and direct all phases purchasing procedures. College. Resume, references available. Contact Box 1405, Purchasing, 205 East 42nd St., New York 17, N. Y.

"Purchasing agent or asst. 5½ yrs. experience as purchasing agent large jewelry mfr. B. S. degree in accounting. Time study experience and mechanical background. Desire opportunity to use education and ability. Young enough to relocate." Write Box 1408, Purchasing, 205 East 42nd St., New York, N. Y.

PURCHASING AGENT. 10 yrs. experience in volume—diversified buying. Key man, Plant Engr., Industrial and Constr. bkgd. Seeks top level position N. Y. Area. Write Box 1406, Purchasing, 205 E. 42nd St., New York, N. Y.

Do you use more than 200 lbs. of wiping rags a year? Do you rent industrial towels for 1½ to 3¢ each plus replacement costs?

Then change to 17¢ per lb. GREASE CHAMP . . . it costs slightly more than 1¢ for a cloth twice the size of an industrial towel.

Buy It And Save Twice: (1) 4 to 10¢ a lb. on your present wiper bill; (2) on the extra work Grease Champs performance guarantees. Write For Our Special Trial Bale Offer Now!

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Always in market to buy surplus NUTS, BOLTS, SCREWS, BEARINGS, FITTINGS, TOOLS, ETC.

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### ABRASIVES WANTED

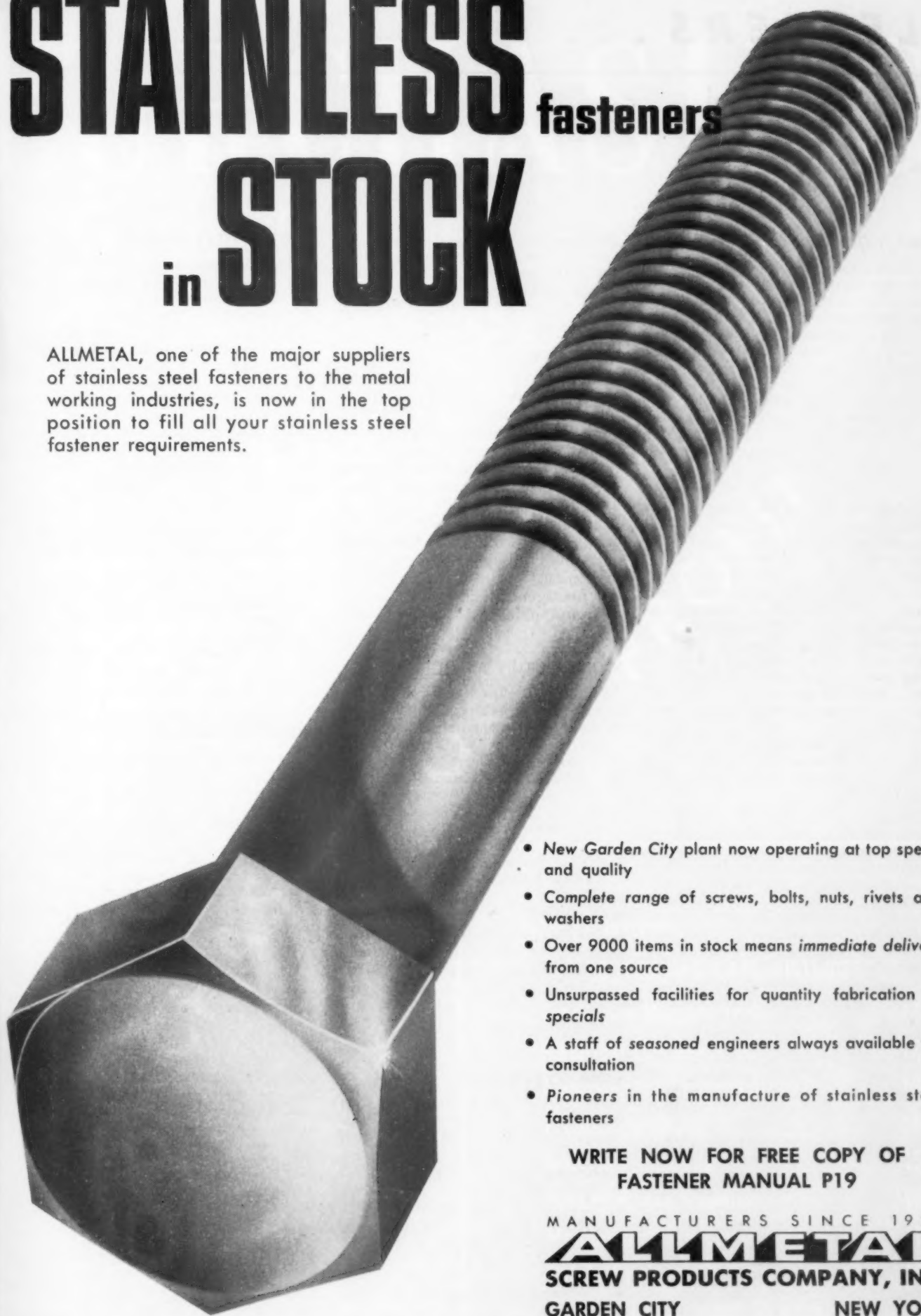
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Phone RAcliff 3-1818

# STAINLESS fasteners in STOCK

ALLMETAL, one of the major suppliers of stainless steel fasteners to the metal working industries, is now in the top position to fill all your stainless steel fastener requirements.



- New Garden City plant now operating at top speed and quality
- Complete range of screws, bolts, nuts, rivets and washers
- Over 9000 items in stock means *immediate delivery* from one source
- Unsurpassed facilities for quantity fabrication of specials
- A staff of *seasoned* engineers always available for consultation
- *Pioneers* in the manufacture of stainless steel fasteners

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MANUFACTURERS SINCE 1929  
**ALLMETAL**  
SCREW PRODUCTS COMPANY, INC.  
GARDEN CITY NEW YORK

# LETTERS . . .

## NO. 1 OBJECTIVE

Your efforts and success in promoting the No. 1 objective of the purchasing fraternity have not gone unnoticed by us "silent partners." You perhaps do not receive many thank you notes, but please consider this one. I send you my congratulations and sincere appreciation for your ceaseless efforts directed towards the betterment of our profession and a more sympathetic audience from management.

R. F. Williams, Pur. Agt.  
The Kahler Corporation  
Rochester, Minn.

Those of us who have been in purchasing for many years have felt the purchasing function was accepted by management as a necessary evil rather than a contributing part of the success of the whole. Much progress has been made in the direction of making management aware of the possibilities of a purchasing division. However, there is still much to be done, and the course that you are now pursuing should bear fruit. You may be sure the writer will follow the progress of this publicity very carefully.

T. J. Latham, Gen. Pur. Agt.  
R. Wallace & Sons Mfg. Co.  
Wallingford, Conn.

It seems to me that this subject has been covered in every meeting, convention, discussion, and publication that directly concerns purchasing. However, I have felt it is time that we stop selling ourselves and start to sell presidents, vice presidents, and general managers. Your current advertisement is the first step along this line that I have seen. Congratulations!

R. E. Edmiston, Pur. Agt.  
Fluid Packed Pump Co.  
Los Nietos, California

Congratulations on an excellent idea. It certainly should help management to become more conscious of purchasing's importance in that team of management. It would give us a great lift, too, if management could find more time to read PURCHASING regularly. Keep up the good work.

G. G. Strehlow, Pur. Agt.  
General Industries, Inc.  
Fort Wayne, Ind.

The program which has been under way by the railroads, giving favorable publicity to the Traffic Manager has been watched by me with great interest

for some time. It is good to know that you are doing the same thing for the Purchasing profession, and I am sure it will benefit all of us.

R. W. Brick, Pur. Agt.  
Solar Aircraft Co.  
San Diego, California

• The above communications are typical of many received in response to our announcement of PURCHASING's new institutional advertising campaign. This series cites the testimony of leading industrial executives as to the important part played by purchasing in their companies' operations. The campaign is being directed to sales and advertising executives through the magazines of marketing, and by direct mail to top management officers of several thousand industrial concerns.—Ed.

## WORN OUT IN SERVICE

In the December 1948 issue of PURCHASING, you published a chart to determine the number of lineal feet in a roll of material. We have used this chart continually since that time, and have found it very useful. The original chart is now quite well worn, and we would like to obtain additional copies, if available.

Hoyt Kremer, Asst. Chief Eng.  
The Rapids-Standard Co., Inc.  
Grand Rapids, Mich.

• For the benefit of reader Kremer and others who may be in a similar position, we are making an exception to long-standing editorial policy and reprinting the chart. Suggestion: Photostat the page for multiple working copies.—Ed.

## HOW TO BUY COAL

The article "When You Buy Coal Don't Buy Trouble" by A. Wyn Williams, in your January issue, is the best article on coal that it has been my pleasure to read. I would very much like to have two reprints of the article when, as, and if they become available.

R. D. Richmond, Dist. Pur. Agt.  
Aluminum Company of America  
Edgewater, N. J.

• No reprints. Tear sheets sent.—Ed.

## SYSTEM GETS RESULTS

The December issue of PURCHASING had a very interesting article written by M. K. Smith, Chief of Materiel, Ryan Aeronautical Co., San Diego, Cal.

We here at National Pneumatic Company, Inc., Holtzer Cabot Divisions, got quite a kick out of this article as we set up our own purchasing policies and standards in an almost identical pattern three years ago. The results we have found speak for themselves, as we have reduced our behind schedule deliveries from 20% to 2.8%, which is rather a remarkable record to accomplish through the application of just plain fundamentals.

National Pneumatic Company and Holtzer Cabot Divisions are both pioneers in their fields, and it has been proven to management that purchasing was a leading factor in helping to attain this pinnacle of acclaim and in maintaining that position.

Charles C. Nolan, Pur. Agt.  
National Pneumatic Co., Inc.  
Boston, Mass.

## CORRECTION

Although all concerned have been very much pleased with the article on "Improved Filter Units" in the November issue of PURCHASING (p. 96), our attention has been drawn to a typographical error of significant proportions in their efficiency, as given there. Filters with no better performance than indicated would be rejected when given the test to which all these filters are subjected.

These filter units have to remove 99.95% of the dioctyl phthalate smoke particles, and not merely 99.5% as reported in the text and photo caption. This may seem insignificant, but that additional 0.45% leakage is nine times as much as Mine Safety Appliance Company tolerates. Those who are familiar with filtering problems and who specify filters to meet severe requirements would certainly recognize the value of this additional performance efficiency.

M. G. Van Voorhis  
Ketchum, MacLeod & Grove, Inc.  
Pittsburgh, Pa.

• We regret this unfortunate slip. Looks as though PURCHASING needs a better filter for screening out typographical errors.—Ed.